行政院所屬各機關因公出國人員出國報告書

（出國類別：開會）

參加 2024 年大氣污染控制費效與達標評估暨大氣霾化學國際學術研討會(2024 International Conference on Air Benefit and Cost and Attainment Assessment & Symposium on Atmospheric Haze Chemistry)

服務機關：環境部

姓名職稱：謝仁碩科長、周文安技士

派赴國家：中國上海

出國時間：113 年 9 月 19 至 9 月 23 日

報告日期：113 年 12 月

摘要

本次 2024 年大氣污染控制費效與達標評估暨大氣霾化學國際學術研討會於 2024 年 9 月 20 日至 9 月 22 日在中國上海市舉行，本部由謝仁碩科長及周文安技士代表我國出席，研討會之目的在於探討空氣污染控制相關議題，包含空污及碳排融合排放清冊與溯源技術、減污減碳協同路徑、空氣污染防制、空氣品質模擬與控制成本效益分析等。研討會內容分為三大部分：大氣污染控制效能與達標評估系統(Air Benefit And Control Assessment System, ABaCAS)系統培訓會、特邀報告及各主題演講。培訓會介紹 ABaCAS 系統架構及功能，包含空氣污染控制成本評估、即時空氣品質模擬分析、空氣品質達標評估及健康效益評估等工具；特邀報告聚焦於減污降碳政策對人體健康及氣候變遷影響；各主題演講則著重於碳污融合排放清冊與溯源技術、空氣品質模擬與控制成本效益分析及碳污協同增效路徑等議題。透過此次研討會，了解到中國在推動減碳減污共利策略時，首重空氣污染物及溫室氣體排放清冊的融合工作，以作為後續政策推動的基礎。此外，中國在空氣污染防制上，已建立完整的管制藍圖，包含時間及空間管制重點。最後，在空氣品質模擬與控制成本效益分析方面，透過 ABaCAS 系統評估各類污染控制措施的效果、控制成本效益及健康效益，以確保資源能夠在有限的預算下最大化環境收益。這些經驗都值得我國在推動空氣品質管理及淨零排放工作時參考。

目錄

壹、 研討會概要

大氣污染控制效能與達標評估(Air Benefit And Control Assessment System, ABaCAS)研討會自 2013 年在杭州首次舉辦，北京、廣州、成都、杭州、青島等城市先後承辦該研討會。近年該研討會探討主題已不僅侷限於 ABaCAS 模式，而是涵蓋整體大氣污染控制相關研究。2024 年於上海市舉行的研討會期程為 9 月 20 日至 9 月 22 日，共計 3 日，本屆研討會研討議題包含空污及碳排融合排放清冊與溯源技術、減污減碳協同路徑、細懸浮微粒及臭氧污染防制、空氣品質模擬與控制成本效益分析等。此外，本屆研討會特別強調人工智慧技術在空氣品質管理的應用，包括深度學習在污染物預報、排放清冊建置及健康風險評估等領域的創新應用。

ABaCAS 系統是一項實用的空氣污染與碳減效益評估工具，能夠即時模擬、量化評估健康效益，可作為制定減污減碳策略的決策支援工具。該系統係於 2010 年起由美中合作研究及開發，旨在為決策者提供高精度、高效率的環境管理工具。系統結構主要包括空氣污染控制成本評估工具、即時空氣品質模擬分析工具、空氣品質達標評估工具、空氣污染控制健康效益評估工具、模式視覺化分析工具、數據融合工具、空氣污染動來源貢獻動態分析工具以及多污染物空氣品質及風險評估分析工具。近年來，該系統更整合了大數據分析及人工智慧技術，大幅提升了模擬效能及預測準確度，使其成為空氣品質管理決策支援的重要工具。

本次研討會內容豐富且具有實務價值，多項研究成果也在美國及中國取得實務應用的實證。研討會主要分為三大部分：ABaCAS 培訓會、特邀報告及各主題演講。培訓會課程主要介紹 ABaCAS 系統架構、各項功能及實務應用成果；特邀報告重點探討減污降碳政策對人體健康及氣候變遷影響；各主題演講則著重於碳污融合排放清冊與溯源技術、空氣品質模擬與控制成本效益分析及碳污協同增效路徑三大主題的研究成果分享。值得一提的是，本次研討會也特別關注空氣品質管理與碳中和目標之間的協同效應，以及如何運用人工智慧等新興科技提升管理效能。這些研究成果不僅有助於促進國際間的經驗交流，也為未來空氣品質管理政策的制定提供了重要參考。

貳、 出國行程

本次赴上海研討會由環境部大氣司謝科長仁碩及周技士文安組團前往，出國行程為 113 年 9 月 19 日至 9 月 23 日，共計 5 日，其中研討會議程為 9 月 20 日至 22 日，全程參與 ABaCAS 培訓會、特邀報告及各主題演講，並於 9 月 23 日與上海市環境科學研究院等單位進行交流，詳如表 2 所示：

表 1 本次出國名單

服務單位		職稱	姓名
環境部	大氣環境司	科長	謝仁碩
		技士	周文安

表 2 蒙古考察出國行程

日　期	說明
113.09.19 （四）	啟程，臺北出發至中國上海市
113.09.20 （五）	1. 參加研討會 ABaCAS 課程。 2. 研討會場地現勘
113.09.21 （六）	1. 研討會大會開幕 2. 特邀演講，包含 ABACAS historical overview and recent Al applications、 Future Air Quality in Northeast Asia under Carbon Neutrality 等。
113.09.22 （日）	參加研討會，分場主題演講包含 1. Emission inventory for atmospheric pollutants and greenhouse gases 2. Advancing technologies applied in source emission measurements 3. Air quality modelling and cost-benefit analysis for air pollution control 4. Roadmap to synergistic control of air pollutants and carbon 5. Continuous reduction of urban 細懸浮微粒 and ozone pollution 6. Ground-air-space monitoring for air pollutants and greenhouse gases 7. Atmospheric environment and health 8. Big data and artificial intelligence technology in the atmospheric environment
113.09.23 （一）	1. 拜會上海市環境科學研究院 2. 返程，搭機返回臺北

參、 參加研討會目的

本次參加 2024 年大氣污染控制費效與達標評估暨大氣霾化學國際學術研討會，主要目的為了解中國在推動減污降碳協同治理的最新進展，特別是 ABaCAS 系統在空氣品質管理的應用成果。通過參與研討會及實地拜訪，可深入了解中國在空氣污染防制的政策推動經驗，尤其是在細懸浮微粒及臭氧污染防制、碳排放管制等領域的具體作法。此外，也期望透過國際交流，學習 ABaCAS 系統的操作技術，以及如何運用該系統進行空氣品質模擬與控制成本效益分析，作為未來制定我國空氣品質管理政策的參考依據。

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>研討會報到</td><td>與研討會主辦單位伏晴艷副院長合影</td></tr>
<tr><td>  </td><td> 
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<tr><td>研討會開幕典禮</td><td>開幕典禮中國環境部說明近年重大空氣污染改善事件</td></tr>
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肆、 開會及行程內容

此研討會主要分為三個部分：一、ABaCAS 培訓會主要介紹系統架構及六大功能模組的實務應用；二、特邀報告探討人體健康風險、空氣污染管制、減污減碳共益及人工智慧應用等議題；三、各主題演講則聚焦於碳污融合排放清冊與溯源技術、空氣品質模擬與控制成本效益分析及碳污協同增效路徑的研究成果。以下將針對各部分內容進行詳細說明：

一、ABaCAS 培訓會

ABaCAS（Air Benefit and Cost and Attainment Assessment System）系統是一個可綜合性評估空氣污染管制與碳減效益之系統，旨在為決策者提供高精度、高效率的環境管理工具。系統結構主要包括空氣污染控制成本評估工具、即時空氣品質模擬分析工具、空氣品質達標評估工具、空氣污染控制健康效益評估工具、模式視覺化分析工具、數據融合工具、空氣污染動來源貢獻動態分析工具以及多污染物空氣品質及風險評估分析工具。本次培訓會課程主要介紹 ABaCAS 系統架構、各項功能及實務應用成果，以下針對各功能模組進行詳細說明：

（一） 空氣污染控制成本評估工具

空氣污染控制成本評估工具(International Emission Control Cost Interface Tool, ICET)係用以評估執行管制策略經濟成本的工具。ICET 具備不同控制技術成本、不同污染物控制成本及不同型態污染源（或部門）控制成本的資料可供決策者使用。決策者可以評估各種減排措施在不同情景下的實施成本，並可結合空氣污染控制健康效益評估工具結果進行互相參照，以協助決策者找到經濟成本最低且環境效益最高的減排策略。

（二） 即時空氣品質模擬分析工具及模式視覺化分析工具

即時空氣品質模擬分析工具及模式視覺化分析工具(Response Surface Model – Visualization Analysis Tool, RSM-VAT)係可即時評估不同

空氣污染物物種減量對空氣品質影響的分析工具，結合視覺化分析工具可供決策快速掌握實施減量對不同區域空氣品質以及不同空氣污染物種濃度變化，也可掌握不同污染源對空氣品質影響貢獻。本次課程特別介紹了 Deep RSM 技術，該技術結合深度學習，可以更進一步提升模式模擬效率，並能針對不同 NOx 和 VOC 控制情境，快速評估細懸浮微粒和臭氧的濃度變化結果。

（三） 空氣品質達標評估工具

空氣品質達標評估工具(Software for Model Attainment Test – Community Edition, SMAT-CE)係用以評估達成空氣品質標準（或目標值）所需空氣污染減量之工具。SMAT-CE 需要利用即時空氣品質模擬分析工具快速模擬的功能，在決策者制定國家、區域或是城市的空氣品質目標時，可以快速評估標的區域內需多少空氣污染物減量才能達成給定的空氣品質目標。SMAT-CE 可協助決策者掌握達成不同等級空氣品質需要付出的減量，並可結合空氣污染控制成本評估工具掌握執行成本，以作為決定空氣品質目標的參考依據。

（四） 空氣污染控制健康效益評估工具

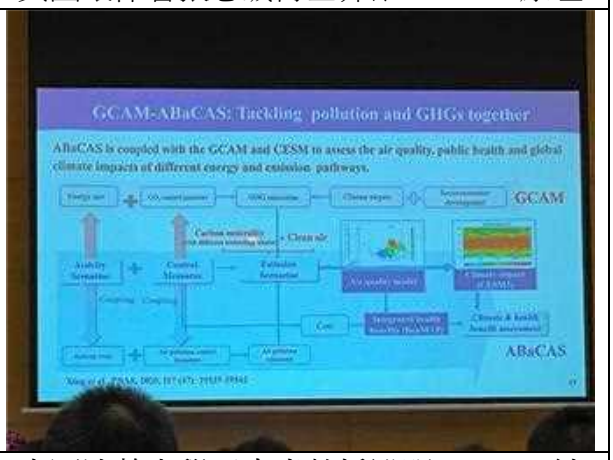
空氣污染控制健康效益評估工具(Environmental Benefit Mapping and Analysis – Community Edition, BenMAP-CE)係用以評估因實施空氣污染控制措施後空氣品質改善，而減少人體健康損失的健康效益評估工具。決策者透過即時空氣品質模擬分析工具可快速掌握實施控制措施後的空氣品質改善效益，再透過 BenMAP-CE 工具可以量化空氣品質改善潛在的健康成本效益。此外，BenMAP-CE 所評估出的健康成本效益資訊也可作為政策溝通或宣傳使用，使民眾可以更容易理解及感受空氣污染管制策略的環境效益。

（五） 數據融合工具

數據融合工具(Data Fusion Tool)是 ABaCAS 系統中的核心整合平台，負責處理與協調各類資料的輸入及輸出作業。該工具不僅能夠進行資料的互相參照與比對，更可以全面性地整合來自不同領域的資訊，包括環境監測數據、空氣品質模擬結果、人體健康影響評估、控制成本分析以及地理資訊系統等多元資料來源。透過先進的資料處理技術，數據融合工具能夠有效地統整、分析這些複雜的資訊，並建立起資料間的關聯性。此外，該工具還提供了便捷的資料檢索功能，使用者可以快速查找、疊加並視覺化呈現 ABaCAS 系統中各項工具的分析結果，大幅提升了系統的整體實用性與決策支援效能。

（六） 多污染物空氣品質及風險評估分析工具

多污染物空氣品質及風險評估分析工具(Nexus)係可同時分析多種空氣污染物及溫室氣體的污染來源貢獻、大氣傳輸途徑、大氣物理化學反應及環境影響關係的分析工具。Nexus 可評估包含細懸浮微粒、臭氧、有害空氣污染物及污染物間交互作用的副產物等空氣污染物；並可分析實施多污染物綜合管制策略對空氣品質改善效益、健康暴露風險以及環境正義等項目。後續應用將朝向開發 Nexus AI 系統，通過人工智慧技術提升用戶與系統之間的交互性，並進一步降低使用門檻。

	
ABaCAS 培訓會議情形	美國環保署張志誠博士介紹 ABaCAS 原理
	
中國清華大學王書肖教授說明 ABaCAS 應用於空污減量評估	中國清華大學王書肖教授說明 ABaCAS 結合溫室氣體減量評估

二、特邀報告

本次研討會特邀報告主要探討空氣污染、氣候變遷、碳中和及空氣品質管理等議題，並討論人工智慧在污染控制的應用。報告內容涵蓋環境管理的重大挑戰，包含公共健康影響、減污減碳策略，以及新技術應用。這些議題展現了環境保護的重要性及科技創新的價值。特邀報告可分為四大主題：減污減碳共利策略、細懸浮微粒和臭氧污染管制策略、空氣污染健康風險評估，以及人工智慧技術應用於模式模擬工具。以下將針對各主題進行解析：：

（一） 減污減碳共利策略

隨著全球氣候變遷議題日益嚴峻，國際間紛紛提出淨零或碳中和目標。2020 年 9 月，中國宣布「二氧化碳排放力爭於 2030 年前達到峰值，努力爭取 2060 年前實現碳中和」的雙碳目標。研究結果顯示，隨著中國碳中和政策的推行，細懸浮微粒和 CO_2 的排放預期能有效減少，尤其在工業部門及能源部門改善效益更為顯著。這些改善主要來自於產業結構調整、能源效率提升以及清潔能源的推廣應用。

研究發現，不同減排策略對污染物的改善效果各異。發展新能源技術對細懸浮微粒及臭氧改善效益最高，而實施節能措施則對減碳效益最為顯著。到 2030 年，隨著可再生能源的大規模推廣和燃煤電廠的逐步淘汰，細懸浮微粒濃度預計將降至 23 $\mu g/m^3$ 以下。目前中國已建成全球最大、最完整和最具競爭力的清潔能源產業鏈，光伏組件產量連續 16 年位居世界首位，風電機組制造產能占全球六成。

要實現減污減碳的協同效益，需要採取系統性的方法。中國已制定「1+N」政策體系，即以一個政策頂層設計搭配 N 個細部與輔助政策，有序推進雙碳目標的實現。包含《中共中央國務院關於完整準確全面貫徹新發展理念做好碳達峰碳中和工作的意見》及《2030 年前碳達峰行動方案》等政策文件，明確時間表和路線圖。透過產業結構優化、能源效率提升以及清潔能源應用等措施，不僅可以減少溫室氣體排放，同時也能降低空氣污染物的排放。研究顯示，這些措施在工業和能源部門的效益特別顯著。此外，不同減排策略的效益各有特色，這些發現為政策制定提供了重要參考。

（二） 細懸浮微粒和臭氧污染管制策略

空氣污染管制已成為現代環境管理的核心工作之一。隨著中國、韓國、日本等東北亞國家工業的快速發展，區域性空氣污染問題及其對人類健康和環境的影響日趨嚴重。本次研討會報告深入探討了如何有效控制空氣污染，特別聚焦於細懸浮微粒和臭氧等關鍵污染物的管制策略，同時也探討了技術創新與國際合作在空氣污染管制中的重要應用。

研究結果顯示，中國在控制細懸浮微粒濃度方面已取得顯著進展。根據長期監測數據及專家評估，自 **2013** 年實施「中國藍天保衛戰」等一系列空氣污染防制政策以來，中國東部主要城市群的細懸浮微粒年平均濃度呈現持續下降趨勢，截至 **2023** 年，相較於 **2013** 年基準年已下降了約 **40%**。這項空氣品質改善成就主要歸功於能源結構的全面優化，包含火力發電廠逐步減少使用燃煤、加裝高效率污染防制設備，以及積極推廣太陽能、風力等可再生能源。然而，這些管制措施的實施過程中也帶來了新的挑戰，例如產業轉型的經濟衝擊、區域污染物傳輸效應，以及在某些地區出現的臭氧濃度反彈現象等。這些寶貴的經驗教訓，無論是成功案例或遭遇的困難，都值得其他面臨類似空氣污染問題的國家深入參考。

研究特別指出，臭氧污染問題在未來幾年可能變得更加突出。隨著全球暖化趨勢，環境氣溫持續上升，加上靜穩天氣增加等氣象條件的影響，將使得臭氧濃度顯著上升。這種趨勢對空氣品質的整體改善構成了新的挑戰，需要制定更有針對性的管制策略。研究建議，未來的空氣污染管制需要更多地關注臭氧前驅物的控制，同時也要加強對大氣化學反應機制的研究，以便更好地應對這一新興的污染挑戰。

（三） 空氣污染健康風險評估

隨著全球工業化進程持續加速及經濟活動規模不斷擴張，空氣污染及溫室氣體排放已成為威脅全球公共健康的首要環境議題之一。本次研討會特別聚焦於探討空氣污染對人體健康的長期累積性影響，並深入研究在未來氣候變遷加劇的情境下，這些健康風險可能呈現的演變趨勢與複雜互動關係。研究團隊採用了全方位的多維度研究方法，透過整合先進的健康風險評估模型系統、長期環境監測數據資料庫、大規模流行病學調查研究成果，以及最新的氣候變遷預測模型，致力於全面且精確地量化空氣污染對人類健康的即時及長期影響。研究特別著重於社會中最易受影響的敏感族群（包括嬰幼兒、學齡兒童、老年人、慢性病患者及孕

婦等）的暴露風險評估，這些深入的研究發現為制定更具針對性且更有效的管制政策提供了堅實的科學實證基礎。

研究結果揭示了令人深感憂慮的事實：以 **2020** 年作為評估基準年，若能透過積極的管制措施將中國的細懸浮微粒年平均濃度降至世界衛生組織建議的 **10** $\mu g/m^3$ 標準，預計每年可為社會減少高達 **3.1** 萬億人民幣的健康相關成本支出。這個驚人的數字不僅凸顯了空氣污染對公共衛生的嚴重威脅，更突顯了其對整體社會經濟發展的重大負面影響。隨著中國積極推動碳中和政策的全面實施，預期整體細懸浮微粒濃度將獲得顯著改善，尤其在空氣污染較為嚴重的北京、上海等大型都會區，改善效果預計將更為明顯。然而，研究同時也發現氣候變遷帶來的新興挑戰：在夏季氣溫持續升高的情境下，中國北方地區的臭氧濃度將呈現明顯上升趨勢，這種變化對民眾的呼吸道健康造成的影響尤其嚴重。最新的研究數據顯示，在現有的氣候變遷趨勢下，隨著環境氣溫每上升 **1**˚**C**，區域臭氧濃度可能隨之增加 **2 ppb** 至 **4 ppb**，這種顯著的濃度變化可能導致當地慢性呼吸道疾病的發生率及相關過早死亡風險大幅上升，對公共衛生體系形成新的重大挑戰。

（四） 人工智慧技術應用於模式模擬工具

大數據及人工智慧技術的快速發展與普及，促使機器學習等先進技術在空氣品質管理領域的應用範圍持續擴大。研討會中介紹了為提升空氣品質監測與預測的精確度所開發的創新技術整合方案。在模擬空間解析度方面，研究人員成功將機器學習技術與 **CFD**（計算流體力學）技術進行整合，開發出可精確至街道層級的高解析度空氣品質模擬技術。此技術整合突破傳統模擬方法在空間解析度上的限制，為城市尺度的空氣品質管理提供新的技術方案，實現微觀尺度污染物擴散模擬。

根據大規模實驗數據分析結果顯示，這項 **CFD** 與機器學習技術混合預測模型在多項關鍵績效指標上均有顯著進展：細懸浮微粒預測準確度相較傳統模型提升 **30%**，此改善程度於空氣品質模擬領域具重大突破。

在臭氧濃度預測方面亦有明顯改善，於複雜光化學反應情境下仍維持高度預測準確性。該模型具備優異空間精確度，可準確模擬並預測街道級別空氣品質變化，且掌握不同時間尺度下污染物濃度變化趨勢，為城市微環境空氣品質管理提供精準完整之決策依據，顯著提升空氣品質管理之科學性與有效性。

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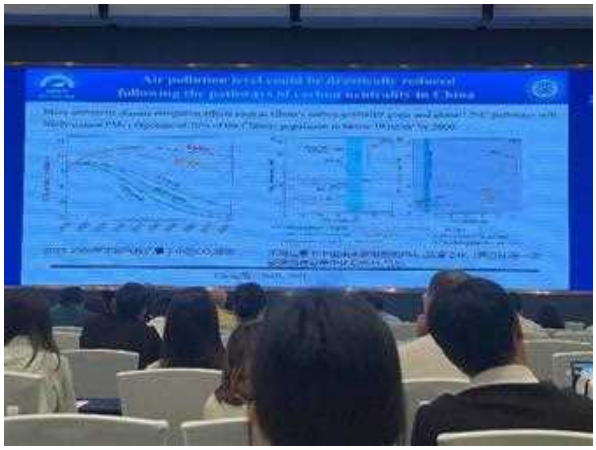
<tr><td>  </td><td> 
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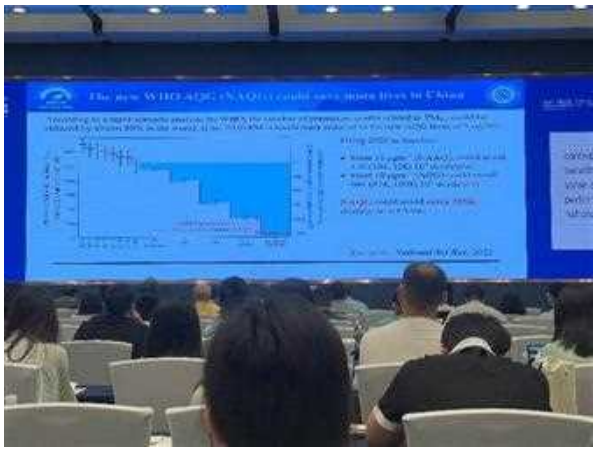
<tr><td>  </td><td>  </td></tr>
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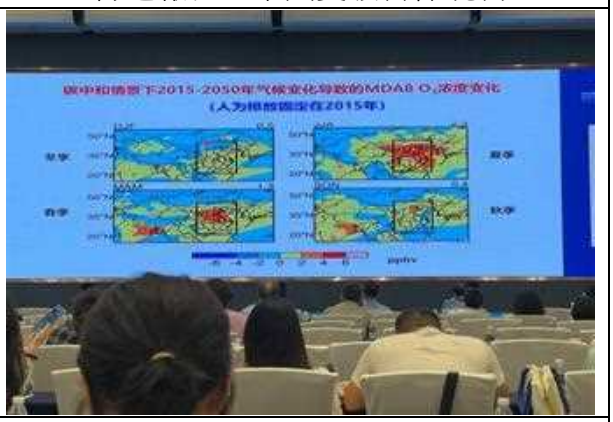
<tr><td>  </td><td>  </td></tr>
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三、各主題演講

此次研討會主題演講包含九大議題，為探討減污減碳共益策略及空氣品質改善策略議題，將著重於蒐集該類群演講報告內容重點，並將演講內容依屬性分成：減污減碳協同路徑、空污及碳排融合排放清冊與溯源技術、$PM_{2.5}$及 O_3污染防制，人工智慧應用於空氣品質模擬與控制成本效益分析進行彙整。

（一） 減污減碳協同路徑

中國於 2022 年 6 月 10 日正式發布《減污降碳協同增效實施方案》，該方案在科學研究領域提出多項重點發展方向，包括開展氫能冶煉金屬技術的創新應用、新型電力系統的整合與優化、碳捕集與利用的技術突破、以及揮發性有機物源頭替代等關鍵技術的深入研發。在重點政策推動方面，該方案提出多項具體措施：首先是「加快城市重污染企業搬遷改造或關閉退出」，以改善城市空氣品質；其次是「大氣污染防制重點區域嚴禁新增鋼鐵、焦化、煉油、水泥等產業」，有效控制高污染產業擴張；第三是「推進北方地區冬季清潔取暖」，減少傳統燃煤供暖帶來的污染；最後是「推廣綠色包裝，推動包裝印刷減量化，減少印刷面積和顏色種類」，從源頭減少污染物排放。

在本次研討會中，專家學者針對減污降碳協同效應進行了廣泛且深入的研究分享。議題涵蓋了多個重要領域：首先是道路交通減污減碳協同路徑研究，探討如何在降低交通污染的同時實現碳減排目標；其次是甲烷排放演變路徑研究，深入分析甲烷排放的時空特徵及其影響因素；另外還包括中國北方地區減污降碳的健康協同影響研究，探討環境改善對公眾健康的積極效應；同時也對鋼鐵水泥等重點行業的碳中和進程及其環境影響進行深入探討；最後還特別關注了上海市機動車輛尾氣排放特徵及其監控體系的建設與完善。

（二） 空污及碳排融合排放清冊與溯源技術

中國政府為積極推動《空氣質量持續改善行動計畫》及《減污降碳協同增效實施方案》等重要政策，著手強化大氣排放源管理體系。這項工作的核心目標在於完善大氣污染物與溫室氣體的融合排放清單核算體系，透過系統性的管理方法提升減污降碳的基礎能力。為了確保這項工作能夠有效地協同推進降碳、減污、擴綠及經濟增長等多重目標，中央政府特別編制了「大氣污染物與溫室氣體融合排放清單編制技術指南」，作為地方級政府執行大氣污染物與溫室氣體融合管理的重要依據與施政指引。

這份技術指南的重要性體現在多個層面：首先，它完整銜接了現有的排放量核算體系，確保政策執行的連續性；其次，針對不同類型的排放源建立了更為細緻的分類分級體系，使管理更有針對性；再者，明確規範了大氣污染物與溫室氣體融合排放清單的編制程序，統一了各地執行標準；最後，詳細說明了各類排放源的技術方法與過程質量控制要求，確保數據的準確性與可靠性。在本次研討會中，專家們深入探討了這份指南的科學研究基礎，特別聚焦於煤碳燃燒過程中大氣污染物與溫室氣體的排放量化方法，以及應用先進的車載尾氣監測系統進行數據量化等關鍵技術議題。

（三） 細懸浮微粒及臭氧污染防制執行策略

中國面臨著 O_3污染改善的重大挑戰，這促使生態環境部於 2022 年積極推動《深入打好重污染天氣消除、臭氧污染防治和柴油貨車污染治理攻堅戰行動方案》。該方案制定了明確的階段性目標：到 2025 年，要全面消除全國範圍內的重度及以上污染，同時實現 $PM_{2.5}$和臭氧的協同控制並取得顯著改善成效。特別強調要有效遏制臭氧濃度的持續上升趨勢，並大幅提升柴油貨車的污染治理水平。這項工作尤其重要，因為移動源所產生的氮氧化物排放量占全國氮氧化物排放總量的 60%左右，對 $PM_{2.5}$和臭氧污染的形成具有重大影響。此外，氨氣排放對 $PM_{2.5}$的形成也有顯著影響，特別是在農業活動頻繁的地區。

在具體執行策略方面，該方案針對不同污染類型制定了細緻的時間和區域管控方案。對於 $PM_{2.5}$高污染的治理，重點管控時段定為秋冬季（10 月至次年 3 月），並將重點防治區域鎖定在污染頻發的京津冀及周邊地區、汾渭平原、天山北坡城市群等區域，根據各地區的污染特徵量身定制相應的改善措施。在臭氧污染防治方面，將 5 月至 9 月作為重點管控時期，重點關注臭氧污染較為嚴重的京津冀及周邊地區、長三角地區、汾渭平原等區域。方案明確要求加大揮發性有機物（VOCs）、氮氧化物和氨氣的減排力度，設定了到 2025 年 VOCs 和氮氧化物排放總量較 2020 年分別下降 10%以上的具體目標，同時加強農業源氨氣排放管控。

在本次研討會上，與會專家學者針對多個關鍵議題展開了深入探討和研究分享。這些議題涵蓋了多個重要面向：首先是針對湖北省在不同天氣條件下 $PM_{2.5}$及 O_3污染的特徵及其防制策略進行深入研究；其次探討了人為烯類排放對臭氧形成的具體貢獻機制；另外還包括對鋼鐵產業區域大氣 VOCs 的來源解析及其在臭氧生成過程中的作用機制研究；並特別關注了氨氣排放對 $PM_{2.5}$二次生成的影響機制研究，以及四川省地區的臭氧生成敏感性問題及其相應的防制策略研究等重要課題。

（四） 人工智慧應用於空氣品質模擬與控制成本效益分析

中國近年重視空氣品質模擬與污染控制評估，主要是因為決策者需要精確預測不同污染源對空氣品質的影響。透過模擬系統，可以評估各類污染控制措施實施後的可能結果，包括 PM2.5 及臭氧等主要污染物濃度的變化。特別重要的是，系統能夠分析 PM2.5 及臭氧的生成與其前驅物之間的非線性關係，這對於制定有效的控制策略至關重要。

控制成本效益分析在空氣污染決策過程中扮演著關鍵角色。透過全面考量各種控制措施的環境效益和經濟成本，能為政府提供更科學的資源配置建議。這種分析方法不僅能幫助政策制定者在有限預算下實現最大的環境效益，還能增強政策的可行性與社會接受度。通過清晰展示污染治理的具體效益，能夠有效提升公眾對相關政策的理解與支持。

本次研討會的研究分享涵蓋多個重要議題，包括：交通運具電動化的成本效益評估（特別針對公共運輸系統的轉型效益），碳中和情境對中國臭氧污染的影響（包含氣候變遷因素的考量），以及 **ABaCAS** 系統在人工智能應用方面的最新進展（如深度學習在污染預測中的應用）。這些研究成果不僅展現了現有技術的應用成效，也為未來空氣品質管理提供了新的思路與方向。

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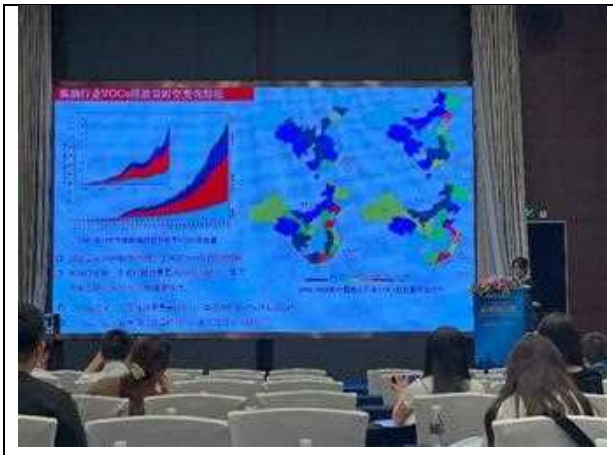
<tr><td>  </td><td> 
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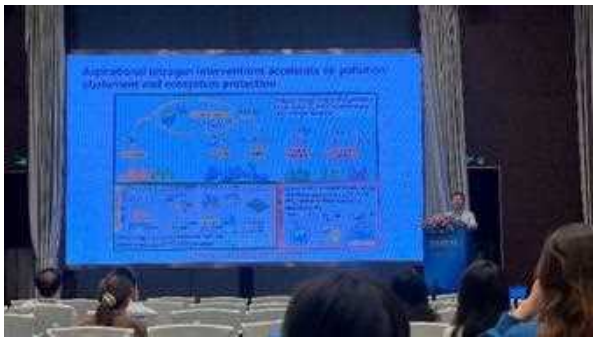
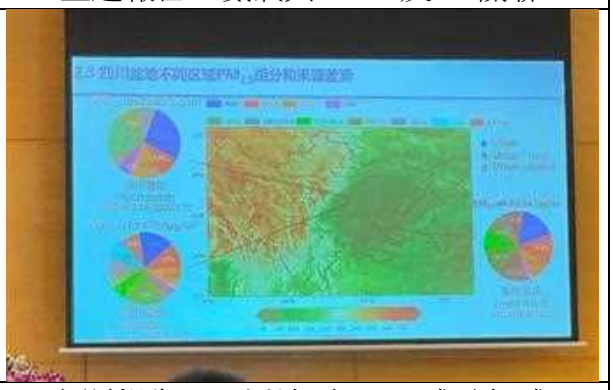
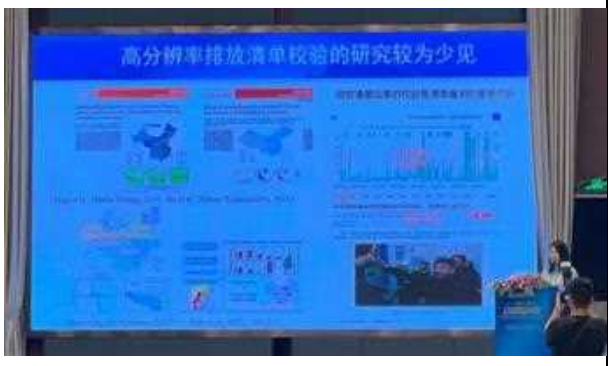
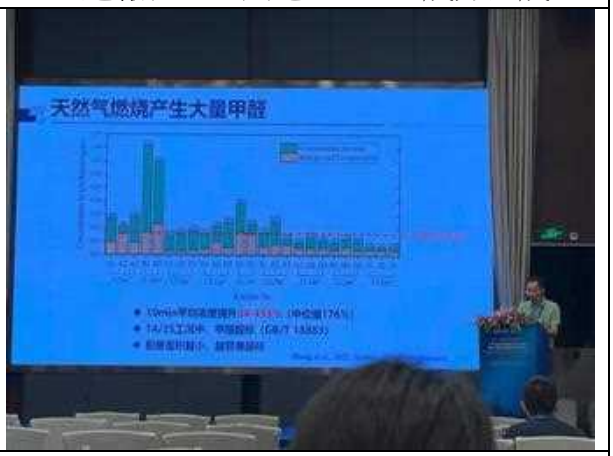
<tr><td>  </td><td>  </td></tr>
<tr><td>主題報告－氮循環對於空污之影響</td><td>主題報告－四川地區 PM2.5 成分組成</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>主題報告－空污排放清冊校驗</td><td>主題報告－減碳路徑中燃氣產生甲醛影響</td></tr>
</table>

四、拜會上海市環境科學研究院

在此次行程最後一日特別安排拜訪上海市環境科學研究院，參訪代表亦包含越南及馬來西亞學者。此次拜會由副院長伏晴艷及多位研究員接待，並針對該院的組織運作、研究成果及應用前景進行深入交流。上海環科院作為上海市環保局的核心技術支持單位，主要負責為地方環境治理提供技術支撐與科學依據。該院的業務範疇涵蓋環境監測、政策制定、技術研發及數據分析，並致力於協助政府部門提升科學決策能力。此次交流及學習重點說明如下：

（一） 近年來上海環科院在空氣污染防治研究領域取得了一系列重要進展。其中，空污與碳排放清冊的融合研究旨在為綜合性減排政策提供更精準的數據支撐；針對氨氣排放對 $PM_{2.5}$生成的影響，該院進行了系統性建模與分析，助力污染成因的全面解析；此外，即時污染地圖的建置已實現突破性進展，透過車上診斷系統（On Board Diagnostics, OBD）即時數據的接入，顯著提升污染監測與應急管理的效能。

（二） 同時，該院對大氣氧化能力在 $PM_{2.5}$及 O_3生成中的作用進行了深入探討，研究顯示，大氣氧化性變化在二次污染生成及光化學反應中扮演關鍵角色，為解決當地大氣污染的複雜成因提供了重要參考。這些成果為改善上海空氣品質提供了科學依據，並為周邊地區提供了可借鑒的解決方案。

（三） 此次拜會有助於深入了解上海環科院在大氣污染防治領域的前沿研究與應用實踐，雙方在交流過程中亦探討了未來可能的合作方向，包括技術分享、數據整合以及聯合研究等具體項目。未來，雙方將在現有的合作基礎上，進一步深化技術交流與經驗分享，努力構建跨區域的大氣污染治理協作機制，共同面對日益嚴峻的空氣污染與氣候變遷挑戰，為區域間環境保護目標的實現作出更大貢獻。

	
參訪－上海環科院參訪合影	參訪－上海環科院研究員介紹污染地圖
	
參訪－上海環科院研究室介紹	與東南亞國家共同參訪上海環科院合影

伍、 心得與建議

一、強化減污減碳共益策略評估及決策支援系統工具

本次研討會中，多名學者分享中國在推動減污降碳協同增效實施方案的經驗，顯示空氣污染物及溫室氣體減量應以系統性思維進行規劃。我國在推動 2050 淨零排放路徑中，亦應將空氣污染物減量效益納入考量，透過科學化評估方法找出最具效益的執行策略，並建立減污減碳效益評估指標系統，以利後續執行成效追蹤。ABaCAS 系統展現其在空氣品質及溫室氣體管理決策支援的實用性，包含空氣污染控制成本評估、即時空氣品質模擬分析、達標評估、減污減碳效益及健康效益評估等功能。建議我國可參考此經驗，建置適合本土需求的空氣品質管理決策支援系統，

將有助於提升空氣品質與溫室氣體管理的科學化程度，並促進減污減碳協同管理的效益。

二、精進排放清冊數據品質與整合

空氣污染物與溫室氣體排放清冊的整合是推動減污減碳政策的重要基礎。中國已發布「大氣污染物與溫室氣體融合排放清單編制技術指南」，提供地方政府作為排放清冊整合的依據。該指南銜接現有排放量核算體系，細化排放源分類分級體系，規定編制程序及明確各類排放源的技術方法。建議我國可參考此經驗，建立本土化的空污與溫室氣體排放源對應關係，並強化排放數據的品質管理。在排放清冊整合過程中，應注意各部門排放特性的差異。以工業部門為例，應考量製程排放、能源使用及原物料消耗等不同面向，以確保排放清冊的準確性及可靠性。

排放清冊的整合不僅有助於掌握污染排放現況，更可作為評估減量策略效益的重要依據。透過分析不同部門的排放貢獻，可協助決策者制定更精準的管制措施，並評估各項減量行動對於空氣品質改善及溫室氣體減量的綜效，以作為後續減量策略規劃之依據。

三、加強臭氧污染防制策略研究

研討會中多項研究指出，在氣候變遷影響下，臭氧污染問題將更加嚴峻。隨著全球暖化加劇，高溫、強輻射等有利於臭氧生成的氣象條件出現頻率增加，使得臭氧污染防制面臨更大挑戰。研究顯示，在高溫環境下，揮發性有機物（VOCs）的揮發量增加，同時光化學反應速率加快，導致臭氧生成速率顯著提升。此外，氣候變遷造成的降雨型態改變，也可能影響臭氧及其前驅物的傳輸與擴散特性。

建議應加強臭氧生成機制研究，特別是在不同氣象條件下 VOCs 與氮氧化物（NOx）的協同控制策略。透過建立高時空解析度的監測網絡，結合氣象資料分析，可更準確掌握臭氧污染的形成條件與區域特性。在此基礎上，針對不同季節、不同區域制定差異化的管制措施，如在高溫季

節加強 VOCs 逸散管制、調整 NOx 排放管制強度等，以更有效改善臭氧污染問題。同時，應建立臭氧污染預警機制，在高污染潛勢期間及時採取應變措施。

四、重視環境健康風險評估及成本效益分析

本次研討會特別重視空氣污染對人體健康的影響評估。隨著工業及經濟發展，細懸浮微粒及臭氧等污染物對健康的危害日益受到關注。研究透過健康風險評估模型，結合環境監測、流行病學及氣候變遷預測數據，量化評估空氣污染的健康影響。建議我國在規劃管制策略時，應加強健康風險評估研究，並將健康效益納入政策評估指標。同時須關注氣候變遷下臭氧濃度上升可能抵消細懸浮微粒改善效益的問題。

在資源有限情況下，應優先執行高效益的管制措施。建議參考研討會中分享的分析方法，如健康效益評估模型(BenMAP-CE)、空氣品質達標評估工具(SMAT-CE)等，建立本土化的分析模式。在實務應用上，建議建立標準化的成本效益評估流程，包含減排量評估、空氣品質改善效益分析、健康效益評估及經濟成本分析等。同時考慮不同管制措施的協同效應，特別是在推動減污減碳政策時，應同時評估對空氣品質及溫室氣體減量的綜效。

五、人工智慧技術提升空氣品質模擬效能

研討會展示多項人工智慧技術在空氣品質管理的創新應用。研究人員結合計算流體力學技術與機器學習方法，發展出高解析度的空氣品質模擬技術。這項技術能夠精確捕捉街道結構特徵、建築物高度對污染物流布的影響，同時透過歷史數據訓練提高預測準確性。此外，研究團隊也採用數據驅動模型，分析不同氣象條件下污染物濃度的變化關係，並針對細懸浮微粒和臭氧進行多層次模擬。結合實地觀測數據與衛星遙測資料，可以模擬出污染物在不同氣候條件下的分布變化情形。這些創新技術的應用不僅提高了空氣污染預測的準確度，也為城市的空氣品質管理

提供更精準的科學依據。建議我國可評估導入相關技術，以提升空氣品質預報及管理效能。

六、推動智慧化監測管理與污染地圖建置

中國在空氣品質監測上已導入多項智慧化技術，如車載診斷系統（OBD）即時數據連線等。透過在重點區域如工業區、港區及主要道路建置感測器網絡，結合車載診斷系統的即時監測數據，建立高時空解析度的污染地圖。這些感測數據經由雲端平台整合處理後，可即時呈現各區域的污染濃度變化，並透過視覺化介面提供決策者查詢。污染地圖的建置不僅能掌握污染熱區的分布，還可結合氣象資料預測污染物擴散趨勢。系統會自動分析高污染事件的成因，並提供預警訊息給相關單位，以便及時採取應變措施。此外，透過歷史數據分析，可找出特定區域的污染好發時段及污染特徵，作為制定管制措施的依據。建議我國可評估相關技術的應用可行性，以強化污染源監測管理效能。

陸、附錄

一、出國報告摘要版

二、研討會議程

三、研討會手冊

出國報告摘要

一、 出國計畫名稱：2024 年大氣污染控制費效與達標評估暨大氣霾化學國際學術研討會(2024 International Conference on Air Benefit and Cost and Attainment Assessment & Symposium on Atmospheric Haze Chemistry)

二、 出國人：謝仁碩科長、周文安技士

三、 出國日期：113 年 9 月 19 日至 9 月 23 日

四、 出國行程與內容概要：

日　期	工 作 內 容 概 要
113.09.19	啟程，臺北出發至中國上海市
113.09.20	➢ 參加研討會課程。 ➢ 研討會場地現勘。
113.09.21	➢ 參加研討會 ■ 大會開幕 ■ 特邀演講，包含 ABACAS historical overview and recent Al applications、 Future Air Quality in Northeast Asia under Carbon Neutrality 等
113.09.22	➢ 參加研討會，分場主題演講包含 ■ Emission inventory for atmospheric pollutants and greenhouse gases ■ Advancing technologies applied in source emission measurements ■ Air quality modelling and cost-benefit analysis for air pollution control ■ Roadmap to synergistic control of air pollutants and carbon ■ Continuous reduction of urban $PM_{2.5}$ and ozone pollution ■ Ground-air-space monitoring for air pollutants and greenhouse gases

- Atmospheric environment and health
- Big data and artificial intelligence technology in the atmospheric environment

113.09.23 ➢ 拜會上海市環境科學研究院

➢ 返程，搭機返回臺北

五、 行程成果評估及心得建議：

（一） 研討會性質及探討議題

大氣污染控制效能與達標評估(Air Benefit And Control Assessment System, ABaCAS)研討會自 2013 年在杭州首次舉辦，北京、廣州、成都、杭州、青島等城市先後承辦該研討會，至近年該研討會探討主題已不僅侷限於 ABaCAS 模式，而是涵蓋整體大氣污染控制相關研究。今年係於上海市舉行，研討會期程為 113 年 9 月 20 日至 9 月 22 日，共計 3 日，本屆研討會研討議題包含空污及碳排融合排放清冊與溯源技術、減污減碳協同路徑、$PM_{2.5}$ 及 O_3 污染防制、空氣品質模擬與控制成本效益分析等。

（二） 研討會議題，主要內容為

1. 減污減碳協同路徑

中國 2022 年 6 月 10 日發布《減污降碳協同增效實施方案》，在科學研究方面重點包括開展氫能冶煉金屬、新型電力系統、碳捕集與利用、揮發性有機物源頭替代等關鍵技術研發；重點政策推動包含「加快城市重污染企業搬遷改造或關閉退出」、「大氣污染防制重點區域嚴禁新增鋼鐵、焦化、煉油、水泥等產業」、「推進北方地區冬季清潔取暖」、「推廣綠色包裝，推動包裝印刷減量化，減少印刷面積和顏色種類」等。

本次研討會研究分享議題包含道路交通減污減碳協同路徑研究、甲烷排放演變路徑、中國北

方減污降碳健康協同影響研究、鋼鐵水泥行業碳中和及環境影響研究、上海市機動車輛尾氣排放特徵及監控等。

2. 空污及碳排融合排放清冊與溯源技術

中國政府為了推動《空氣質量持續改善行動計畫》及《減污降碳協同增效實施方案》等相關計畫，強化大氣排放源管理，完善大氣污染物與溫室氣體融合排放清單核算體系，提升減污降碳基礎能力，為協同推進降碳、減污、擴綠、增長提供技術支撐，中央政府編制「大氣污染物與溫室氣體融合排放清單編制技術指南」，提供地方級政府作為大氣污染物與溫室氣體融合之依據。

上述指南銜接現有排放量核算體系，細化排放源分類分級體系，規定大氣污染物與溫室氣體融合排放清單編制程序，明確各類排放源大氣污染物與溫室氣體融合排放清單編制技術方法和過程質量控制等內容。本次研討會報告議題包含上述指南的科學研究基礎，包含煤碳燃燒之大氣污染物與溫室氣體排放量化、車載尾氣監測系統數據量化等。

3. $PM_{2.5}$ 及 O_3 污染防制

中國同樣面臨 O_3 改善不易的挑戰，因此生態環境部在 2022 年推動《深入打好重污染天氣消除、臭氧污染防治和柴油貨車污染治理攻堅戰行動方案》，提出到 2025 年，消除全國重度及以上污染，目標為 $PM_{2.5}$ 和臭氧協同控制取得改善成效，臭氧濃度增長趨勢得到有效遏制；柴油貨車污染治理水平顯著提高，移動源排放總量明顯下降，因移動源氮氧化物排放約占全國氮氧化物排放總量的 60%，對 $PM_{2.5}$ 和臭氧污染貢獻率大。

在 $PM_{2.5}$ 高污染改善部分，以秋冬季（10 月至

次年 3 月）為重點時段，以重污染天氣頻發的京津冀及周邊地區、汾渭平原、天山北坡城市群為重點地區，針對區域不同污染特徵提出相應改善措施；在臭氧污染改善部分，以 5 月至 9 月為重點時段，以臭氧污染較嚴重，同樣為京津冀及周邊地區、長三角地區、汾渭平原等，為國家臭氧污染防治的重點地區，加大揮發性有機物（VOCs）和氮氧化物減排力度，到 2025 年 VOCs、氮氧化物排放總量比 2020 年分別下降 10%以上。

本次研討會研究分享議題包含不同天氣型態下湖北省 $PM_{2.5}$ 及 O_3 污染特徵及防制研究、人為烯類排放對臭氧生成貢獻、鋼鐵區域大氣 VOCs 來源解析及臭氧生成機制研究、四川省地區臭氧生成敏感性及防制研究等。

4. 空氣品質模擬與控制成本效益分析

中國近年重視空氣品質模擬與污染控制評估，因為決策者能夠預測不同污染源對空氣品質的影響，並模擬出在實施各類污染控制措施後的可能結果，例如 $PM_{2.5}$ 及臭氧等主要污染物濃度的變化，特別是 $PM_{2.5}$ 及臭氧的生成與前驅物之間非線性關係，從而評估不同的控制策略是否能達到改善空氣品質的目標。

同時，控制成本效益分析在空氣污染決策中發揮著不可或缺的作用，通過綜合考量各種控制措施的環境效益和經濟成本，為政府提供有效的資源配置策略。政策制定者可以優先投入資源，實現有限預算下的最大環境收益，並且有助於增強政策的社會可接受性，促進公眾對污染治理政策的理解與支持。

本次研討會研究分享議題包含交通運具電動化的成本效益分析、碳中和情境下對於中國臭氧

污染的影響、ABaCAS 近期人工智能應用等。

（三） 拜會上海市環境科學研究院

本次除參加研討會，在出國期間最後一日拜會上海市環境科學研究院，該院由伏晴艷副院長及數名研究員接待，介紹該院為該市環保局提供環境保護技術支持和科學依據，包含環境監測、政策制定、技術研發等方面。

上海市環境科學研究院近年在空氣污染防治研究重點包含空污及碳排排放清冊融合、氨氣排放對當地 $PM_{2.5}$ 生成影響、即時污染地圖建置（包含車上診斷系統（On Board Diagnostics, OBD）即時數據連線）、大氣氧化能力對 $PM_{2.5}$ 及 O_3 生成影響等。

（四）心得與建議事項

1、 在推動減碳減污共利策略前，先奠定空氣污染物及溫室氣體排放清冊融合工作

中國在推動減碳減污共利策略時，面臨與我國相同的問題，即空氣污染物及溫室氣體排放清冊~~地~~的行業別分類及計算方式不同。

借鑒中國在《減污降碳協同增效實施方案》中所推動的融合排放清單編制技術，對大氣污染物與溫室氣體的融合排放清單進行標準化編制，確保準確量化排放數據，作為未來推動減污減碳共利策略的基礎。

2、 $PM_{2.5}$ 及 O_3 污染防制

為大力改善臭氧污染問題，中國政府撰擬「中國大氣臭氧污染防治藍皮書」(2020 年版及 2023 年版)，當中提及 $PM_{2.5}$ 及 O_3 協同減量策略，並引相關學術研究結果為撰寫基礎，可作為我國污染管制之參考資料之一。

3、 空氣品質模擬與控制成本效益分析

未來氣候變遷及淨零路徑下，我國空氣品質變化將增加更多不確定性，應加強評估各類污染控制措施的效果、控制成本效益、健康效益，以利確保資源能夠在有限的預算下最大化環境收益。此不僅能作為污染管制決策者的參考工具，有效配置資源，其效益評估結果還能作為政策推動時社會溝通的基礎。

2024 International Conference on Air Benefit and Cost and Attainment Assessment

&

Symposium on Atmospheric Haze Chemistry

September 20–22, 2024

Shanghai, China

https://www.abacas-dss.com/Conference/2024/

(Third Announcement)

Following the previous ten successful ABaCAS conferences, 2024 International Conference on Air Benefit and Cost and Attainment Assessment & Symposium on Atmospheric Haze Chemistry (ABaCAS 2024) will be held in Shanghai, China, 20–22 September 2024. This conference will be jointly hosted by the Tsinghua University, Shanghai Academy of Environmental Sciences (SAES), Research Center for Eco-Environmental Sciences CAS, Zhejiang University, and South China University of Technology. The Conference aims at providing an exceptional platform for scientists or policy makers from various fields to discuss air pollution control strategies, carbon neutrality roadmap related to energy and the environment for China or worldwide on city, regional or global scales. In addition to the two-day conference (21–22 September), a one-day training workshop (20 September) on the "Air Benefit and Cost and Attainment Assessment System (ABaCAS)" will also be provided to air quality modelers, managers and scientists of interest. During the workshop, demos and hands-on sessions on the state-of-art air quality management and assessment systems will be

provided, especially for their practical application in China.

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—Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, China
—Zhejiang University, China
—South China University of Technology, China

Organizers

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—Hefei Institutes of Physical Science, Chinese Academy of Sciences, China
—Nanjing University of Information Science and Technology, China
—Shanghai Jiao Tong University, China
—Shanghai Environmental Monitoring Center, China

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—State Key Joint Laboratory of Environment Simulation and Pollution Control
—Key Laboratory of Formation and Prevention of Urban Air Pollution Complex (Ministry of Ecology and Environment of the People's Republic of China)
—Key Laboratory of Optical Monitoring Technology (Ministry of Ecology and Environment of the People's Republic of China)
—Shanghai Key Laboratory of Atmospheric Particle Pollution and Prevention
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Conference theme

Synergistic reduction of air pollutants and carbon for further improvement of air quality

Sessions (Include but not limited to)

1. **Emission inventory for atmospheric pollutants and greenhouse gases**

   Session chairs: Qiang ZHANG, Junyu ZHENG

   Conveners: Cheng HUANG, Yu ZHAO, Bo ZHENG, Zhijiong HUANG

2. **Advancing technologies applied in source emission measurements**

   Session chairs: Jianguo LIU, Jingkun JIANG

   Conveners: Xiangxian LI, Tonghao LIU, Gang WANG

3. **"Ground-air-space" monitoring for air pollutants and greenhouse gases**

   Session chairs: Jianmin CHEN, Pinhua XIE

   Conveners: Cheng LIU, Song GUO, Renzhi HU, Guo LI, Shengrong LOU

4. **Air quality modelling and cost-benefit analysis for air pollution control**

   Session chairs: Shuxiao WANG, Zifa WANG

   Conveners: Jianlin HU, Qi YING, Hsin-Chih LAI, David WONG, Bin ZHAO

5. **Roadmap to synergistic control of air pollutants and carbon**

   Session chairs: Gang YAN, Xi LU

   Conveners: Hancheng DAI, Haikun WANG, Yang OU, Yuqiang ZHANG, Yuxuan ZHANG

6. **Continuous reduction of urban $PM_{2.5}$ and ozone pollution**

   Session chairs: Fahe CHAI, Qingyan FU

   Conveners: Peter LOUIE, Jingnan HU, Miao NING, Dan Dan HUANG

7. **Atmospheric environment and health**

   Session chairs: Haidong KAN, Taicheng AN

   Conveners: Qing LI, Yingjun LIU, Jianwei GU

8. **Big data and artificial intelligence technology in the atmospheric environment**

   Session chairs: Dabo GUAN, Jianjun LI

Conveners: Yun ZHU, Jian GAO, Zhen CHENG, Yu ZHAN

9. **Atmospheric haze chemistry**

   Session chairs: Hong HE, Maofa GE

   Conveners: Chuncheng CHEN, Weigang WANG, Biwu CHU, Qingru WU, Guangjie ZHENG

Important Dates

Formal conference: 21-22 September, 2024
ABaCAS training workshop: 20 September, 2024
Early bird registration date: 1 April – 31 July, 2024
Full registration date: 1 August – 20 September, 2024

Location

the Longemont Shanghai Hotel, 1116 West Yan'an Road, Shanghai, China

ABaCAS Schedule

Conference Overview

Date	Time	Event
20 September	9:00~17:35	ABaCAS Training Workshop
	All day	Registration
21 September	8:30~9:00	Opening Ceremony
	9:30~12:00	Plenary Session
	13:30~17:00	Invited Presentations
	17:00~18:00	Plenary Session
	19:00~22:00	Youth forum/Poster session
22 September	8:30~12:00	Parallel Session 1: Emission inventory for atmospheric pollutants and greenhouse gases
		Parallel Session 2: Advancing technologies applied in source emission measurements
		Parallel Session 3: "Ground-air-space" monitoring for air pollutants and greenhouse gases

		Parallel Session 7: Atmospheric environment and health
		Parallel Session 9: Atmospheric haze chemistry
	13:30~18:00	Parallel Session 2: Advancing technologies applied in source emission measurements
		Parallel Session 4: Air quality modelling and cost-benefit analysis for air pollution control
		Parallel Session 5: Roadmap to synergistic control of air pollutants and carbon
		Parallel Session 6: Continuous reduction of urban $PM_{2.5}$ and ozone pollution
		Parallel Session 8: Big data and artificial intelligence technology in the atmospheric environment

Conference Agenda

Opening Ceremony **Time: 21 September 8:30~9:00 Venue: 4F Jade Ballroom**		
Moderator: Shuxiao WANG		
Time	**Event**	
8:30~9:00	Welcome Remarks	
9:00~9:30	Group photo /Tea break	
Plenary Session **Time: 21 September 9:00~12:00 Venue: 4F Jade Ballroom**		
Moderators: TBD		
Time	**Title**	**Presenter**
9:30~9:55	影响大气污染控制决策的重要因素	Bingjiang LIU Special Guest
9:55~10:20	Ambient Air Quality Standards for Health Protection	Tong ZHU Peking University

10:20~10:45	大气细颗粒毒理与健康危害	Guibin JIANG Research Center for Eco-Environmental Sciences, CAS
10:45~11:10	加快绿色低碳科技创新，推动减污降碳协同治理	Xiang GAO Zhejiang University
11:10~11:35	Nitrogen-Containing Organics Aerosol and Molecular Species in the Atmosphere	Jianmin CHEN Fudan University
11:35~12:00	ABaCAS historical overview and recent AI Applications	Carey Jang South China University of Technology
12:00~13:30	Lunch	
Invited Presentation **Time: 21 September 13:30~17:00 Venue: 4F Jade Ballroom**		
Moderators: Min SHAO, Havala PYE		
Time	**Title**	**Presenter**
13:30~13:45	TBD	Xiangdong LI The Hong Kong Polytechnic University
13:45~14:00	TBD	Armistead (Ted) RUSSELL Colorado State University
14:00~14:15	Environmental justice and public health implications of zero-emission vehicles: A comprehensive analysis in California	Yifang ZHU University of California, Los Angeles
14:15~14:30	大气环境超站在揭示污染成因中的作用	Min HU Peking University
14:30~14:45	Climate mitigation of global energy infrastructure	Dabo GUAN Tsinghua University
14:45~15:00	Future Air Quality in Northeast Asia under Carbon Neutrality	Jun-Hun WOO Seoul National University
15:00~15:15	Integration of Machine Learning and Street-Level Simulation for High-Resolution Street Pollution Forecasts	Shanling GONG Chinese Academy of Meteorological Sciences
15:15~15:30	Tea Break	
Moderators: Qingyan FU, Kenneth LEUNG		
15:30~15:45	Air quality management and source apportionment	Fahe CHAI Chinese Research Academy of Environmental

		Sciences
15:45~16:00	Current studies of woodsmoke, pathogens and microplastics for tropospheric particle chemistry	Hartmut Herrmann Leibniz Institute for Tropospheric Research
16:00~16:15	Understanding the impact of human activity on air quality: a modeling look at aerosol pollution before and after the industrial revolution	Zifang WANG Institute of Atmospheric Physics, CAS
16:15~16:30	Impacts and drivers of future climate change on ozone pollution in China under carbon neutral pathway	Hong LIAO Nanjing University of Information Science and Technology
16:30~16:45	Describing reactive organic carbon with the Community Regional Atmospheric Chemistry Multiphase Mechanism (CRACMM)	Dr. Havala PYE U.S. EPA
16:45~17:00	TBD	Shuxiao WANG Tsinghua University
Plenary Session **Time: 21 September 17:00~18:00 Venue: 4F Jade Ballroom**		
Moderators: Jianguo LIU, Qiang ZHANG		
Time	**Title**	**Presenter**
17:00~17:30	China's pathway selection and strategic pursuit to achieve carbon neutrality in climate change mitigation	Xiaoye ZHANG Chinese Academy of Meteorological Sciences
17:30~18:00	TBD	Kebin HE Tsinghua University
18:00~21:00	Dinner	

Parallel Session 1: Emission inventory for atmospheric pollutants and greenhouse gases

Session chairs: Qiang ZHANG, Junyu ZHENG

Conveners: Cheng HUANG, Yu ZHAO, Bo ZHENG, Zhijiong HUANG

Time: 22 September 8:30~12:00 Venue: 4F Jade Ballroom A

Moderators: Qiang ZHANG, Yu ZHAO		
Time	**Title**	**Presenter**
8:30~8:45	Development and prospects of source apportionment techniques for air pollution	Yinchang FENG Nankai University
8:45~9:00	Emission Factors and Source Profiles of Volatile Organic Compounds in the Petroleum Refining Industry through On-Site Measurement from Multiple Refineries	Shaodong XIE Peking University
9:00~9:15	Ammonia Emission Mitigation Potential and Its Impact on Regional $PM_{2.5}$ Air Pollution	Lin ZHANG Peking University
9:15~9:30	Satellite-based quantification of absorbing aerosol and co-emitted gas emissions from Coal-Use in China	Jason Cohen China University of Mining and Technology
9:30~9:45	Underappreciated emission spikes and impacts on air quality during heatwaves	Lei ZHU Southern University of Science and Technology
9:45~10:00	Assessment of Ammonia Emission Inventories Based on Multi-Site Observations	Zhijiong HUANG Jinan University
10:00~10:15	基于车载尾气监测系统的上海集卡碳排放量化研究	Hongdi HE Shanghai Jiao Tong University
10:15~10:30	Tea Break	
Moderators: Daiqi YE, Zhijiong HUANG		
10:30~10:45	Current Status and Challenges of Establishing Cross-Media Emission Inventories: A Case Study of Mercury	Junyu ZHENG Hong Kong University of Science and Technology (Guangzhou)
10:45~11:00	Changing sector and regional contributions to air pollution and health burden in China	Yu ZHAO Nanjing University
11:00~11:15	Validation and Application of Atmospheric Pollutant Emission Inventories	Zhigang XUE/Na YING Chinese Research Academy of Environmental Sciences
11:15~11:30	Rapid quantifying the emission driver of typical industry based on the real-time daily data in China	Yangxi CHU Chinese Research Academy of Environmental Sciences
11:30~11:45	Emission characteristics of formaldehyde from residential natural gas combustion and load of electrification	Cong LIU Southeast University
11:45~12:00	Integrated Methodology for Compiling Greenhouse Gas and Air Pollutant Emission Inventories	Qian TANG Chinese Academy of Environmental Planning

12:00~13:30	Lunch

Parallel Session 2: Advancing technologies applied in source emission measurements **Session chairs: Jianguo LIU, Jingkun JIANG** **Conveners: Xiangxian LI, Tonghao LIU, Gang WANG** **Time: 22 September 8:30~17:45 Venue: 4F Jade Ballroom B**		
Moderators: Jingkun JIANG		
Time	**Title**	**Presenter**
8:30~8:45	Optical monitoring techniques and applications for atmospheric pollution sources	Jianguo LIU Hefei Institutes of Physical Science, CAS
8:45~9:00	PTR-MS 监测大气挥发性有机物浓度中的不确定性	Lin WANG Fudan University
9:00~9:15	Emission characteristics of hazardous air pollutants based on field measurements and emission inventory development	Hezhong TIAN Beijing Normal University
9:15~9:30	Methods and practices for determining emissions from different combustion stages of household stoves	Xinghua LI Beihang University
9:30~9:45	Enhance the supply of multi-level monitoring technologies and respond to the demand for reduction of pollution and carbon emission	Tonghao LIU China National Environmental Monitoring Centre
9:45~10:00	Research and application of pollution sources measurement based on FTIR technology	Xiangxian LI Hefei Institutes of Physical Science, CAS
10:00~10:15	Challenge analysis of ultra low emission monitoring for stationary sources	Gang WANG China University of Petroleum (East China)
10:15~10:30	Tea Break	
Moderators: Jianguo LIU		
10:30~10:45	固定源超低排放监测与质控研究	Jingkun JIANG Tsinghua University

10:45~11:00	农村实测和实验室模拟民用生物质燃烧的单颗粒排放特征研究	Weijun LI Zhejiang University
11:00~11:15	Characterization of full-volatility organic emissions for diesel trucks in China	Shaojun ZHANG Tsinghua University
11:15~11:30	Characterization and Performance Grading of VOCs Emissions in the Packaging and Printing Industry	Xinmin ZHANG Chinese Research Academy of Environmental Sciences
11:30~11:45	Characterization of organics in condensable particulate matter from stationary sources using comprehensive two-dimensional gas chromatography	Zhaojin AN Harvard University
11:45~12:00	Study on the optical properties and emission quantification of black carbon from typical non-road mobile machinery based on real-world measurements	Bobo WU Beijing Technology and Business University
12:00~13:30	Lunch	
Moderators: Xiangxian LI		
13:30~13:45	第三极大气颗粒物模拟提高及来源解析	Hongliang ZHANG Fudan University
13:45~14:00	大气污染源排放测量技术及应用	Shaofei KONG China University of Geosciences (Wuhan)
14:00~14:15	Volatile organic compounds emission characteristics, environmental impact and health risk assessments of the petrochemical industry in the Beijing-Tianjin-Hebei region.	Zhe LV Beijing Municipal Research Institute of Eco-Environmental Protection
14:15~14:30	Non-targeted organic aerosol fingerprint identification technology and application	Yaoqiang HUO Inner Mongolia University of Technology
14:30~14:45	基于大数据的工业园区污染排放量大规模动态核算技术及应用	Hansen ZHAO Jiangsu Environmental Protection Group Co., Ltd
14:45~15:00	Emission reduction technology and monitoring requirements for new generation industrial pollutants	Pengfei LI Central Research Institute of Building and Construction Co., Ltd, Mcc Group
15:00~15:15	Pollution and emission characteristics of particulate matter from zinc electrolysis	Zizhen MA Qingdao University of

	process	Technology
15:15~15:30	Tea Break	
Moderators: Tonghao LIU		
15:30~15:45	可凝性污染物（SO_3/CPM）测量方法研究	Yuzhong LI Shandong University
15:45~16:00	Online monitoring technology for condensable particulate matters from stationary plants under ultra-low emission requirements	Qing LI Fudan University
16:00~16:15	Ammonia and amine emissions from typical China VI diesel vehicles	Anlin LIU Sichuan University
16:15~16:30	Current situation and countermeasures for pollution source monitoring	Maohui LIU Tianjin Eco-Environmental Monitoring Center
16:30~16:45	In-situ measurement of gaseous nitrous acid (HONO) emissions from typical urban combustion sources: characteristics and influencing factors	Xiang DING Shanghai Academy of Enivronmental Sciences
16:45~17:00	Fine traceability technology for unorganized emissions of volatile organic compounds	Zehui LI Shanghai Jiao Tong University
17:00~17:15	Progress of monitoring technology for Ammonia in flue gas from pollution sources	Feng LI Shanghai Alwaysbrong Application Technology Co. Ltd.
17:15~17:30	基于无人机的交通污染立体监测研究	Hongdi HE Shanghai Jiao Tong University
17:30~17:45	Analysis of Monitoring Methods and Emission Characteristics of silt loading in Beijing	Yuncheng ZHAO Beijing Municipal Research Institute of Eco-Environmental Protection
18:00~21:00	Dinner	

Parallel Session 3: “Ground-air-space” monitoring for air pollutants and greenhouse gases

Session chairs: Jianmin CHEN, Pinhua XIE

Conveners: Cheng LIU, Song GUO, Renzhi HU, Guo LI, Shengrong LOU

Time: 22 September 8:30~12:00	Venue: 4F Banyan & Maple	
Moderators: Song GUO, Guo LI		
Time	**Title**	**Presenter**
8:30~8:45	Optical monitoring techniques for free radicals and key precursors in the atmosphere	Pinhua XIE Hefei Institutes of Physical Science, CAS
8:45~9:00	面向降碳减污的超光谱精准遥感与人工智能技术	Cheng LIU University of Science and Technology of China
9:00~9:15	Vertical distribution of mixing state and hygroscopicity of particulate matter on the Tibetan Plateau	Nan MA Jinan University
9:15~9:30	Characterization of atmospheric component changes at Shanghuang Observatory	Xiaole PAN Institute of Atmospheric Physics, CAS
9:30~9:45	陆源输送与海洋释放相互作用的大气复合污染研究	Kan HUANG Fudan University
9:45~10:00	四川盆地气溶胶差异性来源成因与健康效应	Yang CHEN Chongqing Institute of Green and Intelligent Technology, CAS
10:00~10:15	Characterization and Risk Assessment of Hazardous VOCs in Hong Kong	Dasa GU Hong Kong University of Science and Technology
10:15~10:30	Tea Break	
Moderators: Pinhua XIE, Cheng LIU		
10:30~10:45	Aqueous production of sulfur-containing aerosols from nitroaromatic compounds and SO_2 in wintertime urban haze	Mindong CHEN Nanjing University of Information Science and Technology
10:45~11:00	Techniques and methods for detecting physical and chemical structures of the urban boundary layer	Yele SUN Institute of Atmospheric Physics, CAS
11:00~11:15	The advancements and strategies in the construction of Guangdong Province's coordinated monitoring network for air pollution and greenhouse gases	Duohong Chen Guangdong Provincial Ecological Environment Monitoring Center

11:15~11:30	Determine emissions and their spatial distributions of important perfluorinated greenhouse gases in China based on atmospheric measurements from multiple sites	Minde AN Massachusetts Institute of Technology
11:30~11:45	Observations and accounting of atmospheric pollutants and greenhouse gases emission from ecosystems	Qian YU Nanjing University
11:45~12:00	基于 FTIR 光谱技术的碳污协同监测及其应用	Yusheng QIN Hefei Institutes of Physical Science, CAS
12:00~13:30	Lunch	

Parallel Session 4: Air quality modelling and cost-benefit analysis for air pollution control

Session chairs: Shuxiao WANG, Zifa WANG

Conveners: Jianlin HU, Qi YING, Hsin-Chih LAI, David WONG, Bin ZHAO

Time: 22 September 13:30~17:30 **Venue: 4F Jade Ballroom A**

Moderators: Jianlin HU, Hsin-Chih LAI

Time	Title	Presenter
13:30~13:45	Development and Application of Regional Meteorology-Chemistry Online Coupled Model WRF-GC	Zongmei FU Southern University of Science and Technology
13:45~14:00	The cost benefit analysis of electrification of mobile sources in the public domain: a start of promoting transportation structure	Qinwen TAN Chengdu Academy of Environmental Protection Sciences
14:00~14:15	How to Quantify the Impact of Aerosol on Sky Color	Jiandong WANG Nanjing University of Information Science and Technology
14:15~14:30	What is MPAS-CMAQ?	David WONG U.S. EPA
14:30~14:45	Estimating Location-Specific Health Co-	Amir HAKAMI

	benefits of CO_2 Mitigation Using the Adjoint of CMAQ	Carleton University
14:45~15:00	Improved understanding of interactions between extreme weather events and air quality based on a high-resolution Earth system model	Yang GAO Ocean University of China
15:00~15:15	Co-benefit analysis of air quality management plans and public health in Taiwan	Hsin-Chih LAI Taiwan Chang Jung Christian University
15:15~15:30	Tea Break	
Moderators: Bin ZHAO, David WONG		
15:30~15:45	Optimal emission control plan aiming to basically eliminate $PM_{2.5}$ heavy pollution in North China	Jie LI Institute of Atmospheric Physics, CAS
15:45~16:00	Emissions from Structural Fires at the Wildland-Urban Interface: From Carpets to Couches & Shingles to Studs	Shantanu JATHAR Colorado State University
16:00~16:15	Simulation and Optimization Control for Pollution and Carbon Reduction	Wenbo XUE Chinese Academy of Environmental Planning
16:15~16:30	Comparative Study on the Effectiveness and Applicability of Multi-Model Ozone Forecasting in BTHR and YRD	Bing LIU China National Environmental Monitoring Center
16:30~16:45	Simulation and Cause Analysis of Ozone Pollution in Shanghai	Qian WANG Shanghai Environmental Monitoring Center
16:45~17:00	Factors causing long-term trends in precursor emissions and ambient ozone concentrations in Japan	Chatani SATORU National Institute for Environmental Studies
17:00~17:15	Utilizing the CMAQ Adjoint Model for Air Pollution Assessment in China	Huizhong SHEN Southern University of Science and Technology
17:15~17:30	Analysis of air pollution event days and weather patterns in Taiwan	Min-Chuan HSIAO Taiwan Chang Jung Christian University
18:00~21:00	Dinner	

Parallel Session 5: Roadmap to synergistic control of air pollutants and carbon

Session chairs: Gang YAN, Xi LU Conveners: Hancheng DAI, Haikun WANG, Yang OU, Yuqiang ZHANG, Yuxuan ZHANG Time: 22 September 13:30~17:45 Venue: 4F Jade Ballroom C		
Moderators: Yuqiang ZHANG, Yuxuan ZHANG		
Time	**Title**	**Presenter**
13:30~13:45	Atmospheric reactive halogens reshaped by the clean energy policy on the North China Plain	Tao WANG The Hong Kong Polytechnic University
13:45~14:00	烟气减污降碳协同增效技术途径与费效分析	Junhua LI Tsinghua University
14:00~14:15	Neglected large impacts of sulfate on present and future methane emissions	Lu SHEN Peking University
14:15~14:30	Decarbonization will lead to more equitable air quality	Shupeng ZHU Zhejiang University
14:30~14:45	Growing but overlooked carbon and air pollutants emissions from agricultural machinery in China	Minghao ZHUANG China Agricultural University
14:45~15:00	Potentials of aspirational nitrogen interventions in improving future global air quality under climate mitigation scenarios	Yixin GUO Hong Kong University of Science and Technology (Guangzhou)
15:00~15:15	Target Setting and Pathway Optimization for Synergistic Control of Air Pollutants and Greenhouse Gases	Yueyi FENG Chinese Academy of Environmental Planning
15:15~15:30	Tea Break	
Moderators: Yuqiang ZHANG, Yuxuan ZHANG		
15:30~15:45	An Integrated Assessment Tool for Enhancing Climate Mitigation and Air Quality Improvement	Shaohui ZHANG International Institute for Applied Systems Analysis
15:45~16:00	Source attribution of carbon and air pollution and their mitigation	Guoliang SHI Nankai University
16:00~16:15	Cost-effective transition pathways for key industries	Dan TONG Tsinghua University
16:15~16:30	Health co-benefits of carbon reduction in Northern China	Yang XIE/Meng XU Beihang University
16:30~16:45	Carbon-neutral pathways and environmental	Ming REN

	impacts in China's steel and cement industries	China University of Petroleum (Beijing)
16:45~17:00	Study on the synergistic effects of pollutant reduction from carbon neutrality in China's transportation sector	Yanru FANG Chinese Research Academy of Environmental Sciences
17:00~17:15	Secondary pollution and its health effects in response to urbanization	Zhaolei ZHANG Fudan Univeristy
17:15~17:30	芳香烃和 NO_x 光反应过程中 HONO 形成新机制	Tianzeng CHEN Research Center for Eco-Environmental Sciences, CAS
17:30~17:45	TBD	Yusen DUAN Shanghai Technology Center for Reduction of Pollution and Carbon Emissions
18:00~21:00	Dinner	

Parallel Session 6: Continuous reduction of urban $PM_{2.5}$ and ozone pollution

Session chairs: Fahe CHAI, Qingyan FU

Conveners: Peter LOUIE, Jingnan HU, Miao NING, Dan Dan HUANG

Time: 22 September 13:30~18:15 **Venue: 4F Banyan & Maple**

Moderators: Qingyan FU, Peter LOUIE		
Time	**Title**	**Presenter**
13:30~13:45	Inter-Comparison of Measured and Modeled Ozone Production Rates	Min SHAO Jinan University
13:45~14:00	Preliminary analysis of greenhouse gases in Hong Kong	Peter LOUIE Hong Kong Environmental Protection Department
14:00~14:15	New ideas of environmental air quality research in the era of big data	Shuncheng LI Hong Kong University of Science and Technology (Guangzhou)
14:15~14:30	The Current Challenges in Developing	Zhijun WU

	Aircraft-Based Measurements of Air Pollutants and Greenhouse Gases in China	Peking University
14:30~14:45	Research on the Characterization, and Prevention and Control Practice of $PM_{2.5}$ and Ozone Pollution in Hubei Province under Different Weather Types	Wei LIU Hubei Provincial Academy of Eco-Environmental Sciences
14:45~15:00	Integrated Analysis of Air Quality-Vegetation-Health Effects of Future Air Pollution Control Strategies: A case study of ZiBo	Li LI Shanghai University
15:00~15:15	Research on the co-benefits of pollution reduction and carbon reduction in the field of urban road transportation in Sichuan Province	Yuan LI Sichuan Academy of Eco-Environmental Sciences
15:15~15:30	Tea Break	
Moderators: Miao NING, Dandan HUANG		
15:30~15:45	The Role of Anthropogenic Monoterpenes in Ozone Formation in a Chinese Megacity	Xuemei WANG Jinan University
15:45~16:00	环杭州湾地区排放因子特征研究	Qingyan FU Shanghai Academy of Environmental Sciences
16:00~16:15	Synergistic Strategies for Air Pollution and Climate Change in California	Dongmin LUO California Air Resources Board
16:15~16:30	The observation of ozone formation and short-term transportation in north bank area of Hangzhou Bay	Guangli XIU East China University of Science and Technology
16:30~16:45	Fast identification of high emitter for mobile source emission and roadside air quality management	Ning ZHI Hong Kong University of Science and Technology
16:45~17:00	Trend and evolution of surface O_3 and O_3-precursor relationship in Hong Kong and China	Zhe WANG Hong Kong University of Science and Technology
17:00~17:15	Sources of organic aerosol in wintertime Shanghai based on online molecular composition	Defeng ZHAO Fudan University
17:15~17:30	Source analysis of atmospheric VOCs and the mechanisms of ozone formation in steelmaking regions	Jinping CHENG Shanghai Jiao Tong University
17:30~17:45	Drivers of Increasing Ozone during the Two Phases of Clean Air Actions in China 2013-2020	Yuxi LIU Chinese Academy of Environmental Panning
17:45~18:00	Study on ozone formation sensitivity and pollution control in Southern Sichuan Province	Li HAN Sichuan Academy of Eco-Environmental Sciences

18:00~18:15	Airvoice company (UAE, USA): high-density platforms for monitoring and forecasting air quality in the city and region	Slava Lapachev SityAir Co.
18:15~21:00	Dinner	

Parallel Session 7: Atmospheric environment and health **Session chairs: Haidong KAN, Taicheng AN** **Conveners: Qing LI, Yingjun LIU, Jianwei GU** **Time: 22 September 8:30~12:29** **Venue: 4F Boardroom**		
Moderators: Taicheng AN, Qing LI		
Time	**Title**	**Presenter**
8:30~8:45	Identification and assessment of environmental health risks	Shunqing XU Hainan University
8:45~9:00	Toxicity effects and health risks posed by emerging flame retardant pollutants	Hui LI Shanghai University
9:00~9:15	Identifying low-concentration yet high-potency toxic components in $PM_{2.5}$	Ling JIN The Hong Kong Polytechnic University
9:15~9:30	Study on the oxidative potential characteristics of mineral aerosol	Qingcai CHEN Shaanxi University of Science & Technology
9:30~9:42	Toxicological effects of atmospheric particulate matters and associated emerging contaminants on human lung cells	Xiaosan LUO Nanjing University of Information Science and Technology
9:42~9:54	The Developmental Toxicity Targets and Mechanisms of Airborne Pollutants Exposure	Huifeng YUE Shanxi University
9:54~10:06	Internal and external exposure of heavy metals and PAHs in size-resolved PMs from household solid fuel combustion source	Hongmei XU Xi'an Jiaotong University
10:06~10:20	Tea Break	
Moderators: Yingjun LIU, Jianwei GU		
10:20~10:35	Systematic Assessment of Health Effects Induced by Exposure to Airborne $PM_{2.5}$ Water-Soluble Inorganic Ions	Ke HAO Tongji University
10:35~10:50	Atmospheric aging on soot particles and the	Jing SHANG

	potential health effects	Peking University
10:50~11:05	Cardiovascular effects of indoor ozone chemistry: Preliminary results from a panel study in Lhasa	Yingjun LIU Peking University
11:05~11:17	Evaluating the Impact of Climate Change on Heat Waves and Pollution Exposure: A Comprehensive Health and Economic Risk Assessment	Shupeng ZHU Zhejiang University
11:17~11:29	Effects of Aerosol acidity on low birthweight: a preliminary study	Bin HAN Chinese Research Academy of Environmental Sciences
11:29~11:41	Toxicological mechanisms of ambient $PM_{2.5}$-induced abnormal cardiovascular metabolism	Yanyi XU Fudan University
11:41~11:53	Environmental processes of bioaerosol and its associated health effects	Fangxia SHEN Beihang University
11:53~12:05	Alzheimer-like changes and related mechanisms in SH-SY5Y cells promoted by ultrafine black carbon	Yu SHANG Shanghai University
12:05~12:17	Multi-organ toxicity caused by $PM_{2.5}$ in elderly with cardiovascular diseases: the role of PAHs played in the most polluted episodes in Xi'an	Jian SUN Xi'an Jiaotong University
12:17~12:29	Health Risk Assessment of Atmospheric Fine Particulate Matter Based on Systems Toxicology	Zhenglu WANG West China Hospital of Sichuan University
12:30~13:30	Lunch	

Parallel Session 8: Big data and artificial intelligence technology in the atmospheric environment **Session chairs: Dabo GUAN, Jianjun LI** **Conveners: Yun ZHU, Jian GAO, Zhen CHENG, Yu ZHAN** **Time: 22 September 13:30~17:45** **Venue: 4F Boardroom**		
Moderators: Dabo GUAN, Zhen CHENG		
Time	**Title**	**Presenter**
13:30~13:45	Advancing Air Quality Management and research through AI application	Yun ZHU South China University of Technology

13:45~14:00	Preliminary Exploration of AI Teaching Engines in Environmental Science: A Case Study on Atmospheric Environment	Nan LI Tsinghua University
14:00~14:15	Chemical transport model emulation based on Fourier Neural Operator	Zhen CHENG Shanghai Jiao Tong University
14:15~14:30	Global scale atmospheric pollution parameter inversion and reconstruction with machine learning	Qiangqiang YUAN Wuhan University
14:30~14:45	Addressing concept drift in spatiotemporal machine learning models	Yu ZHAN Sichuan University
14:45~15:00	Understanding the Key Nonlinear Issues of Atmospheric Compound Pollution and Their Impact on Machine Learning Methods	Kai SHI China West Normal University
15:00~15:15	MYATMOS: novel method to analyzed big data with stochastic and an artificial intelligent approach	Zaitun Yahaya NOOR The Clean Air Forum Society of Malaysia
15:15~15:30	Tea Break	
Moderators: Jianjun LI, Yun ZHU		
15:30~15:45	An Intelligent Data-Driven Method for Environmental Management	Guangfei YANG Dalian University of Technology
15:45~16:00	Life Cycle Carbon Footprint and Electric Carbon Coupling Technology	Shangheng YAO Energy Development Research Institute of China Southern Power Grid
16:00~16:15	Exploring Changes in Urban Isoprene and Its Impact under the Background of Climate Warming Using Machine Learning	Nan WANG Sichuan University
16:15~16:30	Seamless estimation of ozone concentrations using a multisource data deep learning fusion framework	Tongwen LI Sun Yat-Sen University
16:30~16:45	Research progress and some key issues about data-driven air pollution remote sensing	Zongwei MA Nanjing University
16:45~17:00	Spatiotemporal Seamless Intelligent Sensing of Surface Visibility and Particulate Matter Concentrations in China and Their Application	Ke GUI Chinese Academy of Meteorological Sciences
17:00~17:15	Prediction and Cause Analysis of Regional Ozone Pollution Based on Deep Learning	Song GAO Shanghai University
17:15~17:30	Multiscale Temporal Variations of Atmospheric Mercury Distinguished by the Hilbert-Huang Transform Analysis Reveals Multiple El Niño-Southern Oscillation Links	Ly Sy Phu NGUYEN VNUHCM-University of Science

17:30~17:45	Exploring Construction Solutions for Intelligent Agent Systems in the Ecological Environment Domain: A Case Study of Nexus AI	Yuanyi HUANG South China University of Technology/Cloud & Information (Guangdong) Eco-Environment Science and Technology., LTD.
18:00~21:00	Dinner	

Parallel Session 9: Atmospheric haze chemistry

Session chairs: Hong HE, Maofa GE

Conveners: Chuncheng CHEN, Weigang WANG, Biwu CHU, Qingru WU, Guangjie ZHENG

Time: 22 September 8:30~12:00 **Venue: 4F Jade Ballroom C**

Moderators: Chuncheng CHEN, Qingru WU

Time	Title	Presenter
8:30~8:45	Research progress on interface reaction mechanism in atmospheric haze chemistry	Qingxin MA Research Center for Eco-Environmental Sciences, CAS
8:45~9:00	Simulation techniques for laboratory investigation of atmospheric haze chemistry	Lin DU Shandong University
9:00~9:15	Mass Spectrometry at the Air-water Interface	Xinxing ZHANG Nankai University
9:15~9:30	Enhanced Ozone Oxidation Pathway to Sulfate aerosols in East Asia after China's SO_2 Emission Control: direct evidence from $\Delta^{17}O$	Yanlin ZHANG Nanjing University of Information Science and Technology
9:30~9:45	Surface-area dependence of sulfur (IV) oxidation rate in aerosol microdroplets	Pai LIU Beijing Institute of Technology
9:45~10:00	Multiphase Buffering by Ammonia Sustains Sulfate Production in Atmospheric Aerosols	Guangjie ZHENG Tsinghua University
10:00~10:15	Divergent Impacts of Biomass Burning and Fossil Fuel Combustion Aerosols on Fog-Cloud Microphysics and Chemistry: Novel Insights From Advanced Aerosol-Fog	Ye KUANG Jinan University

	Sampling	
10:15~10:30	Tea Break	
Moderators: Weigang WANG, Guangjie ZHENG		
10:30~10:45	Formation and aging of nitrogen-containing organic aerosol	Rujin HUANG Institute of Earth Environment, CAS
10:45~11:00	The mechanism of new particle formation induced by iodic acid	Xiuhui ZHANG Beijing Institute of Technology
11:00~11:15	Formation and Synergistic Joint Control Strategies for $PM_{2.5}$ and Ozone Pollution from the Atmospheric Oxidation Perspective	Keding LU Peking University
11:15~11:30	Impact of Biogenic VOCs on Secondary Organic Aerosol Formation from PAHs oxidation	Song GUO Peking University
11:30~11:45	Nocturnal Atmospheric Synergistic Oxidation Reduces the Formation of Low-volatility Organic Compounds from Biogenic Emissions	Yue ZHAO Shanghai Jiao Tong University
11:45~12:00	Modeling the formation and aging process of secondary organic aerosols from two typical megacities of China: results with new observational constraints	Weiwei HU Guangzhou Institute of Geochemistry, CAS
12:00~13:30	Lunch	

ABaCAS Training Workshop **Time: 20 September 9:00~17:35 Venue: 4F Banyan & Maple**		
Chair: Yun ZHU		
Time	**Title**	**Presenter**
9:00~9:05	Welcome Remarks	Qingyan FU Shanghai Academy of Environmental Sciences
9:05~9:55	空气污染控制成本效益与达标评估系统（ABaCAS）概述、进展及应用	Shuxiao WANG/ Zhicheng ZHANG Tsinghua University/ South China University of Technology

9:55~10:25	ABaCAS 主要功能及人工智能应用趋势	Yun ZHU South China University of Technology
10:25~10:40	Tea Break	
10:40~11:10	ABaCAS 长三角案例介绍	Jingyu AN Shanghai Academy of Environmental Sciences
11:10~12:00	ABaCAS-EI 排放清单介绍	Haotian ZHENG/Shengyue LI Nanjing University/ Tsinghua University
12:00~14:00	Lunch	
14:00~15:15	空气质量对排放控制的实时响应原理及工具（RSM-VAT）操作培训	Zhaoxin DONG/Jinying LI Tsinghua University/ South China University of Technology
15:15~15:45	大气污染动态源贡献分析工具（FAST-CE）概述、演示及功能操作培训	Shaoyi WANG South China University of Technology
15:45~16:00	Tea Break	
16:00~16:35	多重污染物空气质量规划工具（Nexus）概述、演示及功能操作培训	Shicheng LONG South China University of Technology
16:35~17:05	空气质量达标评估工具（SMAT-CE）概述、演示及功能操作培训	Mengmeng ZHANG South China University of Technology
17:05~17:35	Discussions	
18:00~21:00	Dinner	

Youth Forum: Oral

Moderators: Hongliang ZHANG, Shuhui ZHU

Time: 21 September 19:00~22:05 Venue: 4F Banyan & Maple

Time	Title	Presenter
19:00~19:15	Publishing with the Environmental Science journals of the Royal Society of Chemistry	Grace Thoburn Royal Society of Chemistry

19:15~19:25	空气质量监测系统数智化运维建设方案探讨	Xiangdong WANG ORiEL
19:25~19:35	Modelling of the Impact of Marine Chlorine Emissions on Secondary Organic Aerosols over the North China Plain	Zhaoqi GAO Shandong University
19:35~19:45	The Nexus of International Trade and Green Energy Integration: Shaping Emission Pathways in China's Aluminum Cycle	Shuting JIA North China Electric Power University
19:45~19:55	Joint effect of short-term exposure to fine particulate matter and ozone on mortality: A time series study in 272 Chinese cities	Yixuan JIANG Fudan University
19:55~20:05	Greenhouse Gas and Organic Volatile Gas Emissions from China's Oil and Gas Supply Chain	Jia LIU Tsinghua University
20:05~20:15	Regional Meteorological Feature Extraction Enhances Deep Learning for Extended 120-hour $PM_{2.5}$ Forecasting	Xinyi LIU Sichuan University
20:15~20:25	A Featured-Species-Based Inverse Dispersion Method for Estimating Emission Intensities of Volatile Organic Compounds in the Chemical Industry	Yanjun LIU Nanjing University
20:25~20:35	Public Perception and Official Data Discrepancies Regarding Air Quality Improvement in China in the Past Decade	Danyue ZHAO Shanghai Jiao Tong University
20:35~20:45	Long-term variation and influencing factors of hydroxy methyl sulfonate (HMS) in winter in Beijing	Tao MA Guangdong University of Technology
20:45~20:55	Towards a Holistic Understanding of New Particle Formation in China	Jiewen SHEN Tsinghua University
20:55~21:05	An ensemble machine learning model to enhance extrapolation ability of predicting coarse particulate matter with high resolutions in China	Su SHI Fudan University
21:05~21:15	酸度通过促进金属溶解驱动大气颗粒物毒性效应改变	Xiwen SONG Fudan University
21:15~21:25	A review of machine learning for modeling air quality: Overlooked but important issues	Die TANG Sichuan University
21:25~21:35	Spatiotemporal Evolution of CFCs-HCFCs-HFCs Emissions from China's Refrigeration Industry Driven by Domestic Demand and	Siheng XU North China Electric Power University

	Exportation	
21:35~21:45	Long-term variability in black carbon emissions constrained by gap-filled absorption aerosol optical depth and associated premature mortality in China	Wenxin ZHAO Nanjing University
21:45~21:55	Enhanced heterogeneous decomposition of inorganic nitrogen compounds on deliquesced aerosol particles	Haotian ZHENG Nanjing University
21:55~22:05	Multi-media Flows and Emissions of Hazardous Trace Elements in China's Coal System	Yanghao LIU North China Electric Power University
Poster Session **Time: 21 September 19:00~21:55 Venue: 4F Next to Banyan & Maple**		
ID	**Title**	**Presenter**
1	A Study on the Development of an Equation for the Transition Value of the Photochemical Indicator O_3/NO_Y	Chang-You TSAI Taiwan Yunlin University of Science and Technology
2	Predicting ozone episodes in China in the 2050s using extreme value models	Fengwei WAN Peking University
3	Improving WRF-CMAQ Air Quality Prediction Accuracy Through Machine Learning Techniques	Chien-Hung Chen Taiwan Yunlin University of Science and Technology
4	Analysis of the Source Characteristics of Volatile Organic Compounds in Typical Industries in Southwest China	Xiao HU Fujian Normal University
5	Global wildfire emissions of full-volatility organic compounds from 1997 to 2023	Lvyin HUANG Tsinghua University
6	Integrated Benefits of Synergistically Reducing Air Pollutants and Carbon Dioxide in China	Shengyue LI Tsinghua University
7	Co-benefits of climate mitigation for food security in China	Shouxiu LI Ocean University of China
8	Modeling the Formation of Organic Compounds across Full Volatility Ranges and Their Contribution to Nanoparticle Growth in a Polluted Atmosphere	Zeqi LI Tsinghua University
9	Synoptic controls on warm-season O_3 pollution in eastern China: a focus on O_3-NOx-VOC chemistry	Zhiheng LIAO Institute of Urban Meteorology, CMA, Beijing
10	Comparative Study on VOC Emission Inventory of Typical Petrochemical Enterprises in Fujian and Emission Reduction	Yuehua LIU Fujian Normal University

	Potentials	
11	Potential Benefits Evaluation of $PM_{2.5}$ Control Measures: A Case Study in Taiwan	Shi-Jie NIEH Taiwan Industrial Technology Research Institute
12	A Case Study on Methodological Approaches for Integrating CMAQ Data and AI Models	Yung-Chen YAO Taiwan Industrial Technology Research Institute
13	Response of organic aerosol in Beijing to emission reductions: Blue Winter Olympics vs. Gray Lockdown Haze	Qipeng QU Tsinghua University
14	High Spatial Resolution Anthropogenic Air Pollutants and Carbon Dioxide Emission Inventory in China in 2020	Zhezhe SHI Tsinghua University
15	Development of a nonlinear response surface model linking point source emissions to $PM_{2.5}$ concentrations	Qian SONG Tsinghua University
16	Gestational Exposure to Air Pollution and $PM_{2.5}$ Constituents Impair Intrauterine Fetal Growth Trajectory	Pengbo ZHAO Tongji University

Registration

For participants, please register for the conference through the conference website (https://www.abacas-dss.com/Conference/2024/) before September 19th, or register onsite at the conference venue on September 20th.

Participants	**Early bird registration before July 31st**	**Full registration August 1st~September 20th**
Current students	**CNY 1000**	**CNY 1200**
Non-students	**CNY 1800**	**CNY 2000**

Payment method:

The conference committee entrusts "Shanghai Association of Environmental Protection Industry" to collect the registration fee and issue an invoice. In order to reduce the waiting time at the reporting site, participants are requested to pay the registration fee by **scanning the QR code** or **bank transfer** to the following account provided by ICBC Bank:

1. **QR code:**

2. Bank transfer:

(1) **For domestic participants,** you can transfer the conference registration fee by transferring to the bank account of Shanghai Association of Environmental Protection Industry.

账户名称：上海市环境保护产业协会

银行账号：1001 2715 0901 4462 105

开户银行：中国工商银行徐汇华山路支行

(2) **For international participants**, you can transfer the conference registration fee by transferring to the bank account of Shanghai Association of Environmental Protection Industry.

Account Name: Shanghai Association of Environmental Protection Industry

Association Address: Suite 17, No. 278, Wu Xing Road, Shanghai, China

Account number: 1001 2715 0901 4462 105

SWIFTBIC: ICBKCNBJSHI

Account bank: Industrial and Commercial bank of CHINA Shanghai branch

Bank Address: #1065 Zhao Jia Bang road, Shanghai, China

NOTES:

(1) **For the above two payment methods, please write "ABaCAS+ your abbreviation + your name" in the transfer notes, otherwise the Organizing committee will not be able to confirm your transfer information.**

(2) After the transfer/remittance, please send your personal information, transfer/remittance voucher and invoice information to scapc@mail.tsinghua.edu.cn as soon as possible. The conference team will send your electronic invoice to your email address.

(3) **Cancellation:** Cancellation before September 1st, 2024 will be subject to a 20% fee. Cancellations will not be accepted after September 1st, 2024, but replacement of participants will be allowed. If you need to cancel or replace the participant, please send the cancellation request and replacement request to scapc@mail.tsinghua.edu.cn.

Special Issue

The conference will feature a special issue in collaboration with ***Environmental Science: Atmospheres***, dedicated to the **International Conference on Air Benefit and Cost and Attainment Assessment (ABaCAS) 2024**. This special issue will encompass a broad range of topics, reflecting the diverse and cutting-edge research presented at the conference. We invite all researchers who present their work at ABaCAS 2024 to submit their papers for consideration in this special issue.

Theme:

Special issue dedicated to the International Conference on Air Benefit and Cost and Attainment Assessment (ABaCAS) 2024

Focus Aereas:

1. Emission inventory for atmospheric pollutants and greenhouse gases
2. Advancing technologies applied in source emission measurements
3. “Ground-air-space” monitoring for air pollutants and greenhouse gases
4. Air quality modelling and cost-benefit analysis for air pollution control
5. Roadmap to synergistic control of air pollutants and carbon
6. Urban air pollution control
7. Atmospheric environment and health
8. Big data and artificial intelligence in the atmospheric environment
9. Atmospheric haze chemistry

Guest Editors:

Hongliang ZHANG, Fudan University
Song GUO, Peking University
Biwu CHU, Research Center for Eco-Environmental Sciences, CAS
Bo ZHENG, Tsinghua University

Website:

https://blogs.rsc.org/ea/2024/08/08/special-issue-dedicated-to-the-international-conference-on-air-benefit-and-cost-and-attainment-assessment-abacas-2024/

Abstract Reception and Outstanding Youth Report Awards

The abstract submission has been closed. **The notification of acceptance and the information of poster session have been notified by Email**. Please check the mail. **The conference will select 10 Outstanding Youth Report Awards based on merit.**

Hotel and Accommodation

The conference venue will be the Longemont Shanghai Hotel, 1116 West Yan’an Road, Shanghai, China. Participants can book hotel rooms in the conference venue or nearby hotels by the following means. Please contact the conference affairs team (Wenxin ZHOU, Tel: 86-13761333378) for any inquiries.

Hotel	Address	Room prices	Reservation
Longemont Shanghai Hotel (conference venue)	1116 West Yan’an Road	Deluxe Room (1 queen bed): ￥600 /room/night (Includes 1 breakfast)*	

		VIP Room (2 double beds): ￥700 /room/night (Includes 2 breakfasts)* Executive Suite (1 queen bed): ￥1500 /room/night (Includes 2 breakfasts)*	
Hanting Youjia Hotel (Shanghai Zhongshan Gongyuan Yan'an Road)	No.1 Panyu Road, Yan'an West Road, Changning District, Shanghai (~150 meters away from the conference venue)	￥350~500 /room/night**	You can make a reservation on the website
Ji Hotel (Shanghai Yan'an Road)	No.1066 Yan'an West Road, Changning District, Shanghai (~200 meters away from the conference venue)	￥600~800 /room/night**	
Jinjiang Metropolo Classiq Jing'An Hotel	No. 918 Yan'an West Road, Changning District, Shanghai (~400 meters away from the conference venue)	￥500~700 /room/night**	

* The room prices at the Longemont Shanghai Hotel are discounted for conference participants. Please book and pay for your room through the QR code provided or the following web link: http://www.imm-cloud.com:8080/webroom.html?id=ASS0921

** The room prices of other hotels may fluctuate according to the market condition. We suggest you make a reservation as early as possible.

Languages

Chinese/English

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For sponsorship inquiries, please contact Lin at 13917083064.

2024 大气污染控制费效与达标评估暨大气霾化学国际学术研讨会

2024 International Conference on Air Benefit and Cost and Attainment Assessment & Symposium on Atmospheric Haze Chemistry

会议手册

Conference Manual

常务主办单位： 清华大学

主 办 单 位： 上海市环境科学研究院、中国科学院生态环境研究中心
浙江大学、华南理工大学

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支 持 单 位： 能源基金会

ABaCAS 2024

2024年9月20日－9月22日，中国·上海
20-22 September, 2024, Shanghai, China

欢迎辞

时光荏苒，如同白驹过隙，大气污染控制费效与达标评估研讨会（ABaCAS）这一国际学术盛会已伴随我国清洁空气行动走过了十载辉煌历程。自2013年在杭州首次举办以来，北京、广州、上海、成都、杭州、青岛等城市先后承办过ABaCAS研讨会。这些年度盛会不仅为全球学者提供了一个交流思想、碰撞智慧的舞台，而且见证了大气污染防治科技的迅猛发展和我国空气质量改善的显著成就。

在追求美丽中国的宏伟愿景和公众对美好生态环境的热切期望中，大气污染防治无疑是一场漫长而充满挑战的征途。这一征程需要我们每一位专家学者的持续努力和不懈奋斗。ABaCAS会议的宗旨，正是为了搭建一个跨学科、跨领域的学术交流平台，汇聚各方智慧，共同探索中国乃至全球在能源与环境领域的可持续发展之路，以及有效控制大气污染的策略。

我们期待在2024年9月20日至22日的盛会上，无论是同行还是跨学科的学者，都能获得灵感、收获知识和成长。在全球气候行动的新篇章中，我们必须坚持绿色发展理念，回顾大气污染防治的历史足迹和宝贵经验，洞察减污降碳协同增效的必然趋势，并持续推动人与自然和谐共生的中国式现代化进程。

空气质量与气候变化的协同治理，需要跨部门、跨行政边界、跨国界的合作。我们应积极发挥上海作为国际大都市的引领作用，以保护人民健康和应对气候变化为目标，积极参与全球大气环境治理。我们将继续与世界各国专家学者携手合作，为全球可持续发展作出应有的贡献。

郝吉明

2024年9月10日

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Welcome Remarks

Time flies. The International Conference on Air Benefit and Cost and Attainment Assessment (ABaCAS) has accompanied China's Clean Air Action for a decade. Since its initial launch in Hangzhou in 2013, this grand academic gathering has evolved into an annual event, held in Beijing, Guangzhou, Shanghai, Chengdu, Hangzhou, and Qingdao over the past decade. This annual meeting not only provides a platform for global scholars to collaborate and ignite new ideas but also witnesses significant advancements of air pollution control technologies and the remarkable improvement in air quality across China.

In pursuit of the Beautiful China Initiative and the public's expectations for a better ecological environment, the fight against air pollution will remain a long and challenging journey, which requires the continuous efforts from every expert and scholar. ABaCAS aims to establish an interdisciplinary academic platform for experts from China and all over the globe to explore the sustainable development in the energy and environment, as well as in air pollution control.

We hope that both peers and interdisciplinary scholars will find inspiration, acquire knowledge, and experience growth at this conference. In this new chapter of climate change, we should commit to the principles of green development, review the historical and valuable experiences in air pollution control, understand the inevitable trend of synergistic reduction of pollutant and carbon emissions, and continue to promote the process of Chinese modernization aiming at fostering harmony between humanity and nature.

In the context of carbon neutrality and climate change, air quality management requires cooperation across departments, regions, and nations. We should actively leverage Shanghai's role as an international metropolis to meet global health demand, to react to climate change, to participate vigorously in the management of atmospheric environment globally. We will continually collaborate with worldwide researchers to promote global sustainable development.

Jiming HAO

Sep. 10, 2024

会议须知

会议时间

2024年9月20–22日

会议地点

中国·上海·龙之梦大酒店（上海市长宁区延安西路1116号）

交通信息

高铁到达：

1. 上海虹桥站：

驾车：14公里，约40分钟

公共交通：地铁10号线（虹桥火车站→交通大学站（5号口）→步行约1公里），全程约45分钟
地铁2号线（虹桥火车站→江苏路站（7号口）→步行约1.5公里），全程约45分钟

2. 上海站：

驾车：7.7公里，约20分钟

公共交通：地铁4号线外圈或者地铁3号线（上海火车站→延安西路站（2号口）→步行约1.5公里），
全程约45分钟

3. 上海南站：

驾车：9公里，约25分钟

公共交通：地铁3号线（上海南站→延安西路站（2号口）→步行约1.5公里），全程约38分钟

飞机到达：

1. 上海虹桥国际机场：

驾车：13公里，约40分钟

公共交通：地铁10号线（虹桥2号航站楼站→交通大学站（5号口）→步行约1公里），全程约45分钟
地铁2号线（虹桥2号航站楼站→江苏路站（7号口）→步行约1.5公里），全程约45分钟

2. 上海浦东国际机场：

驾车：51公里，约1小时15分钟

公共交通：地铁2号线（浦东国际机场站→江苏路站（7号口）→步行约1.5公里），
全程约1小时32分钟

用餐信息

会议期间提供茶歇、午餐和晚餐，正餐请持会议餐券用餐

用餐时间：午餐12:00－13:30（9月21－22日）、晚餐17:30－21:00（9月20－22日）

用餐地点：（茶歇）会议室外走廊、（午/晚餐）龙之梦大酒店二楼

注意事项

会议期间，请将手机调至振动或静音状态。

Important Information

Conference Date

20–22 September, 2024

Conference Venue

Longemont Shanghai Hotel, Shanghai, China (1116 West Yan'an Road, Shanghai, China)

Transportation

Arrive by High-Speed Railway (HSR):

1. Shanghai Hongqiao Railway Station:

Option 1 (about 40 minutes): Driving 14 km.
Option 2 (about 45 minutes): Taking Metro Line 10 (Hongqiao Railway Station to Jiaotong University Station, Exit 5). Then walking about 1 km to arrive at the conference venue.
Option 3 (about 45 minutes): Taking Metro Line 2 (Hongqiao Railway Station to Jiangsu Road Station, Exit 7). Then walking about 1.5 km to arrive at the conference venue.

2. Shanghai Railway Station:

Option 1 (about 20 minutes): Driving 7.7 km.
Option 2 (about 45 minutes): Taking Metro Line 4 or Line 3 (Shanghai Railway Station to West Yan'an Road Station, Exit 2). Then walking about 1.5 km to arrive at the conference venue.

3. Shanghai South Railway Station:

Option 1 (about 25 minutes): Driving 9 km.
Option 2 (about 38 minutes): Taking Metro Line 3 (Shanghai South Railway Station to West Yan'an Road Station, Exit 2). Then walking about 1.5 km to arrive at the conference venue.

Arrive by Airplane:

1. Shanghai Hongqiao International Airport:

Option 1 (about 40 minutes): Driving 13 km.
Option 2 (about 45 minutes): Taking Metro Line 10 (Hongqiao Airport Terminal 2 Station to Jiaotong University Station, Exit 5). Then walking about 1 km to arrive at the conference venue.
Option 3 (about 45 minutes): Taking Metro Line 2 (Hongqiao Airport Terminal 2 Station to Jiangsu Road Station, Exit 7). Then walking about 1.5 km to arrive at the conference venue.

2. Shanghai Pudong International Airport:

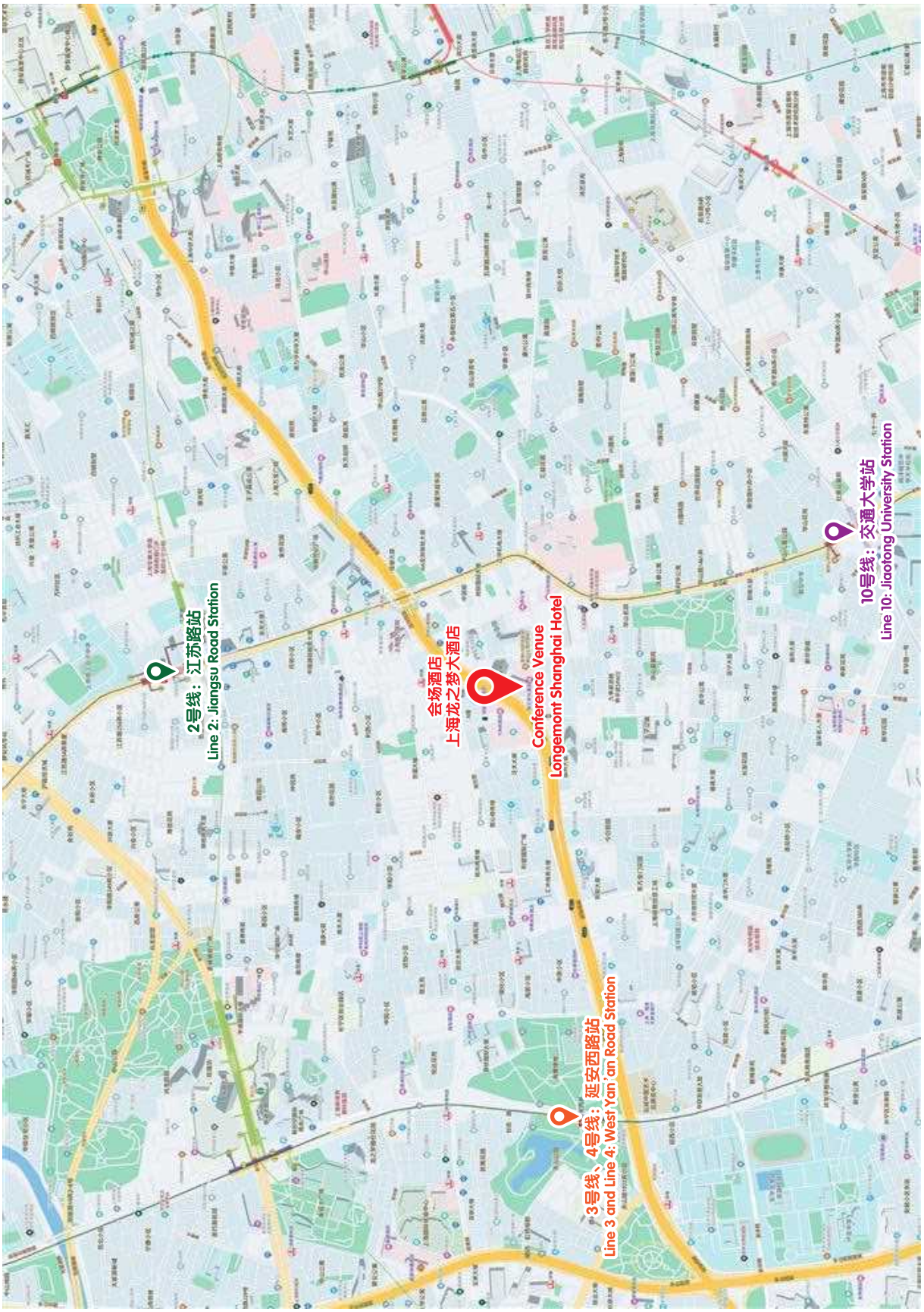
Option 1 (about 75 minutes): Driving 51 km.
Option 2 (about 92 minutes): Taking Metro Line 2 (Pudong International Airport Station to Jiangsu Road Station, Exit 7). Then walking about 1.5 km to arrive at the conference venue.

Catering

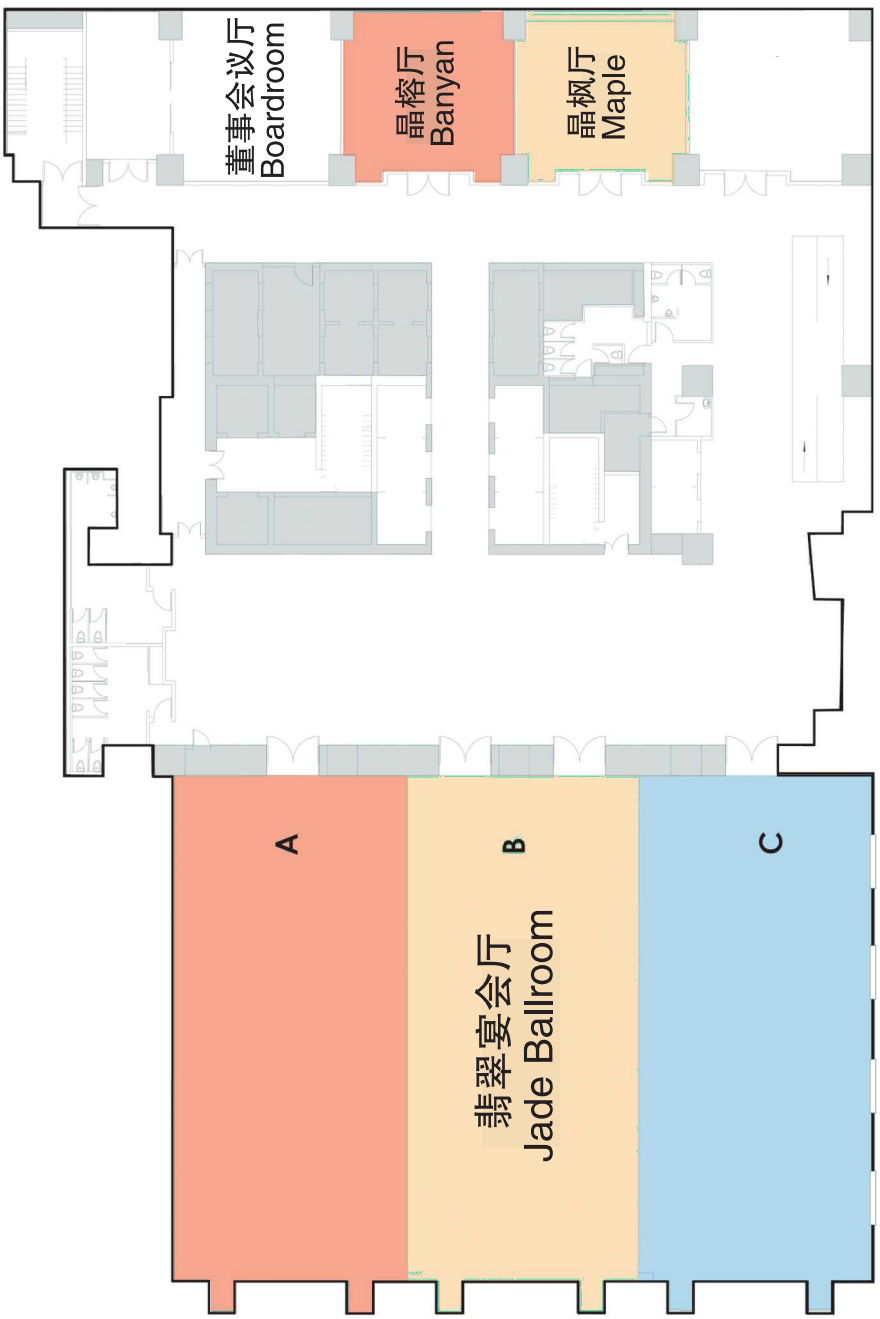
Lunch: 12:00~13:30 (21-22 September), 2nd floor, Longemont Shanghai Hotel.
Dinner: 18:00~21:00 (20-22 September), 2nd floor, Longemont Shanghai Hotel.
Tea Break: corridor outside the conference hall.

Attentions

Please ensure that your mobile phone is always silent at the Conference hall.


2号线：江苏路站
Line 2: Jiangsu Road Station
会场酒店
上海龙之梦大酒店
Conference Venue
Longemont Shanghai Hotel
10号线：交通大学站
Line 10: Jiaotong University Station
3号线、4号线：延安西路站
Line 3 and Line 4: West Yan'an Road Station

会场平面图
Venue Floor Plan



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会议介绍
Conference Introduction

大气污染控制费效与达标评估国际学术研讨会已成功举办了十届，2024年大气污染控制费效与达标评估暨大气霾化学国际学术研讨会现定于2024年9月20–22日在上海召开，本次会议由清华大学、上海市环境科学研究院、中国科学院生态环境研究中心、浙江大学、华南理工大学联合主办，复旦大学、中国科学院合肥物质科学研究院、南京信息工程大学、上海交通大学、上海市环境监测中心共同协办，承办单位包括生态环境部大气复合污染来源与控制重点实验室、生态环境部城市大气复合污染成因与防治重点实验室、生态环境部环境光学监测技术重点实验室、生态环境部长三角区域大气复合污染上海淀山湖科学观测研究站，以及环境模拟与污染控制国家重点联合实验室、上海市大气颗粒物污染防治重点实验室、江苏省大气环境监测与污染控制高技术研究重点实验室、上海市环境保护产业协会，旨在为不同领域、不同学科的专家学者和决策者提供一个高水平学术交流平台，共同探讨中国城市、区域乃至全球能源与环境相关的碳中和路径和大气污染防控策略，进一步推动我国碳污减排、协同增效和环境空气质量持续改善。会议期间还将安排“大气污染控制效益 / 成本评估和达标系统（ABaCAS）”培训会，为感兴趣的空气质量建模者、管理者和研究者提供最前沿的中国本地化空气质量评估系统功能和使用演示。

Following the previous ten successful ABaCAS conferences, 2024 International Conference on Air Benefit and Cost and Attainment Assessment & Symposium on Atmospheric Haze Chemistry (ABaCAS 2024) will be held in Shanghai, China, 20-22 September 2024. This conference will be hosted by the Tsinghua University, Shanghai Academy of Environmental Sciences (SAES), Research Center for Eco-Environmental Sciences CAS, Zhejiang University, and South China University of Technology. The Conference aims at providing an exceptional platform for scientists or policy makers from various fields to discuss air pollution control strategies, carbon neutrality roadmap related to energy and the environment for China or worldwide on city, regional or global scales. In addition to the two-day conference (21-22 September), a one-day training workshop (20 September) on the “Air Benefit and Cost and Attainment Assessment System (ABaCAS)” will also be provided to air quality modelers, managers and scientists of interest with demo and hands-on sessions on the state-of-art air quality management and assessment systems, especially for application in China.

会议组织架构
Conference Institution

常务主办单位
清华大学

主办单位
上海市环境科学研究院、中国科学院生态环境研究中心、浙江大学、华南理工大学

协办单位
复旦大学、中国科学院合肥物质科学研究院、南京信息工程大学
上海交通大学、上海市环境监测中心

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生态环境部大气复合污染来源与控制重点实验室、环境模拟与污染控制国家重点联合实验室
生态环境部城市大气复合污染成因与防治重点实验室、生态环境部环境光学监测技术重点实验室
上海市大气颗粒物污染防治重点实验室、江苏省大气环境监测与污染控制高技术研究重点实验室
生态环境部长三角区域大气复合污染上海淀山湖科学观测研究站、上海市环境保护产业协会

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会议主题

大气污染控制费效与达标评估暨大气霾化学国际学术研讨会的主题：

减污降碳协同增效　空气质量持续改善

会议主要议题包括：

1. 碳污融合排放清单与溯源技术

分会场主席：张强、郑君瑜

召集人：黄成、赵瑜、郑博、黄志炯

2. 污染源排放测量技术与应用

分会场主席：刘建国、蒋靖坤

召集人：李相贤、刘通浩、王刚

3. 大气复合污染和温室气体立体监测

分会场主席：陈建民、谢品华

召集人：刘诚、郭松、胡仁志、李国、楼晟荣

4. 空气质量模拟与控制成本效益分析

分会场主席：王书肖、王自发

召集人：胡建林、应琦、赖信志、David WONG、赵斌

5. 碳污协同增效路径

分会场主席：严刚、鲁玺

召集人：戴瀚程、王海鲲、偶阳、张玉强、张玉璇

6. 城市大气$PM_{2.5}$和臭氧污染防控

分会场主席：柴发合、伏晴艳

召集人：雷国强、胡京南、宁淼、黄丹丹

7. 大气环境与健康

分会场主席：阚海东、安太成

召集人：李庆、刘颖君、顾建伟

8. 大气环境大数据与人工智能

分会场主席：关大博、李健军

召集人：朱云、高健、张宏亮、程真、詹宇

9. 大气霾化学机制

分会场主席：贺泓、葛茂发

召集人：陈春城、王炜罡、楚碧武、吴清茹、郑光洁

Conference Theme

The conference theme will be ***"synergistic reduction of air pollutants and carbon for further improvement of air quality"***, covering the following nine sessions:

1. Emission inventory for atmospheric pollutants and greenhouse gases
Session chairs: Qiang ZHANG, Junyu ZHENG
Conveners: Cheng HUANG, Yu ZHAO, Bo ZHENG, Zhijiong HUANG

2. Advancing technologies applied in source emission measurements
Session chairs: Jianguo LIU, Jingkun JIANG
Conveners: Xiangxian LI, Tonghao LIU, Gang WANG

3. "Ground-air-space" monitoring for air pollutants and greenhouse gases
Session chairs: Jianmin CHEN, Pinhua XIE
Conveners: Cheng LIU, Song GUO, Renzhi HU, Guo LI, Shengrong LOU

4. Air quality modelling and cost-benefit analysis for air pollution control
Session chairs: Shuxiao WANG, Zifa WANG
Conveners: Jianlin HU, Qi YING, Hsin-Chih LAI, David WONG, Bin ZHAO

5. Roadmap to synergistic control of air pollutants and carbon
Session chairs: Gang YAN, Xi LU
Conveners: Hancheng DAI, Haikun WANG, Yang OU, Yuqiang ZHANG, Yuxuan ZHANG

6. Continuous reduction of urban $PM_{2.5}$ and ozone pollution
Session chairs: Fahe CHAI, Qingyan FU
Conveners: Peter LOUIE, Jingnan HU, Miao NING, Dan Dan HUANG

7. Atmospheric environment and health
Session chairs: Haidong KAN, Taicheng AN
Conveners: Qing LI, Yingjun LIU, Jianwei GU

8. Big data and artificial intelligence technology in the atmospheric environment
Session chairs: Dabo GUAN, Jianjun LI
Conveners: Yun ZHU, Jian GAO, Hongliang ZHANG, Zhen CHENG, Yu ZHAN

9. Atmospheric haze chemistry
Session chairs: Hong HE, Maofa GE
Conveners: Chuncheng CHEN, Weigang WANG, Biwu CHU, Qingru WU, Guangjie ZHENG

会务信息 Conference Affairs

会务联系人 Conference Affairs: Contact		
会务组 Service Group	姓名 Name	电话 Tel.
会议注册 Conference Registration	李英杰 Yingjie LI	86 – 134 8253 0949
会场酒店预订 Hotel Registration	米歇尔 Michel	86 – 152 0196 8534
酒店住宿 Accommodation	周文鑫 Wenxin ZHOU	86 – 137 6133 3378
交通 Transportation	乔利平 Liping QIAO	86 – 136 6184 2137
餐饮 Catering	周文鑫 Wenxin ZHOU	86 – 137 6133 3378
应急联系 Emergency Contact	朱书慧 Shuhui ZHU	86 – 136 7193 9734

分会场秘书 Conference Affairs: Staff-in-charge	
分会场 Session	联系人和联系电话 Contact Name / Tel.
分会场一：碳污融合排放清单与溯源技术 Session 1. Emission inventory for atmospheric pollutants and greenhouse gases	安静宇 Jingyu AN 86 – 156 1897 6369
分会场二：污染源排放测量技术与应用 Session 2. Advancing technologies applied in source emission measurements	严茹莎 Rusha YAN 86 – 153 1710 8905
分会场三：大气复合污染与温室气体立体监测 Session 3. “Ground–air–space” monitoring for air pollutants and greenhouse gases	黄丹丹 Dan Dan HUANG 86 – 130 2327 1216
分会场四：空气质量模拟与控制成本效益分析 Session 4. Air quality modelling and cost–benefit analysis for air pollution control	安静宇 Jingyu AN 86 – 156 1897 6369
分会场五：碳污协同增效路径 Session 5. Roadmap to synergistic control of air pollutants and carbon	周敏 Min ZHOU 86 – 139 1852 3363
分会场六：城市大气$PM_{2.5}$和臭氧污染防控 Session 6. Continuous reduction of urban PM2.5 and ozone pollution	黄丹丹 Dan Dan HUANG 86 – 130 2327 1216
分会场七：大气环境与健康 Session 7. Atmospheric environment and health	乔利平 Liping QIAO 86 – 136 6184 2137
分会场八：大气环境大数据与人工智能 Session 8. Big data and artificial intelligence in the atmospheric environment	乔利平 Liping QIAO 86 – 136 6184 2137
分会场九：大气霾化学机制 Session 9. Atmospheric haze chemistry	周敏 Min ZHOU 86 – 139 1852 3363

会议日程
Conference Agenda

议程概览 Conference Overview

9月20日 20 September		
时间 Time	内容 Event	地点 Venue
全天 All day	会议注册、报到 Registration	1F
9:00 ~ 12:00	ABaCAS培训会 ABaCAS Training Workshop	4F晶榕晶枫厅 Banyan & Maple
12:00 ~ 14:00	午餐 Lunch	
14:00 ~ 17:35	ABaCAS培训会 ABaCAS Training Workshop	4F晶榕晶枫厅 Banyan & Maple
18:00 ~ 21:00	晚餐 Dinner	
9月21日 21 September		
时间 Time	内容 Event	地点 Venue
8:30 ~ 9:00	会议开幕式 Opening Ceremony	4F 翡翠宴会厅 Jade Ballroom
9:00 ~ 9:30	合影/茶歇 Group Photo / Tea Break	
9:30 ~ 12:00	主旨报告 Plenary Presentation	
12:00 ~ 13:30	午餐 Lunch	
13:30 ~ 15:15	特邀报告 Invited Presentation	4F 翡翠宴会厅 Jade Ballroom
15:15 ~ 15:30	茶歇 Tea Break	
15:30 ~ 17:00	特邀报告 Invited Presentation	4F翡翠宴会厅 Jade Ballroom
17:00 ~ 18:00	主旨报告 Plenary Presentation	
18:00 ~ 21:00	晚餐 Dinner	
19:00 ~ 22:15	青年论坛：口头报告 / 海报展示 Youth Forum: Oral Presentation / Poster	4F晶榕晶枫厅 Banyan & Maple
22:15 ~ 22:30	青年论坛颁奖礼 Youth Forum Award Ceremony	

9月22日　22 September		
时间　Time	内容　Event	地点　Venue
8:00 ~ 12:00	分会场一：碳污融合排放清单与溯源技术 Session 1: Emission inventory for atmospheric pollutants and greenhouse gases	4F翡翠宴会厅A Jade Ballroom A
	分会场二：污染源排放测量技术与应用 Session 2: Advancing technologies applied in source emission measurements	4F翡翠宴会厅B Jade Ballroom B
	分会场三：大气复合污染和温室气体立体监测 Session 3: “Ground–air–space” monitoring for air pollutants and greenhouse gases	4F晶榕晶枫厅 Banyan & Maple
	分会场七：大气环境与健康 Session 7: Atmospheric environment and health	4F董事会议厅 Boardroom
	分会场九：大气霾化学机制 Session 9: Atmospheric haze chemistry	4F翡翠宴会厅C Jade Ballroom C
12:00 ~ 13:30	午餐　Lunch	
13:30 ~ 18:00	分会场二：污染源排放测量技术与应用 Session 2: Advancing technologies applied in source emission measurements	4F翡翠宴会厅B Jade Ballroom B
	分会场四：空气质量模拟与控制成本效益分析 Session 4: Air quality modelling and cost–benefit analysis for air pollution control	4F翡翠宴会厅A Jade Ballroom A
	分会场五：碳污协同增效路径 Session 5: Roadmap to synergistic control of air pollutants and carbon	4F翡翠宴会厅C Jade Ballroom C
	分会场六：城市大气$PM_{2.5}$和臭氧污染防控 Session 6: Continuous reduction of urban $PM_{2.5}$ and ozone pollution	4F晶榕晶枫厅 Banyan & Maple
	分会场八：大气环境大数据与人工智能 Session 8: Big data and artificial intelligence technology in the atmospheric environment	4F董事会议厅 Boardroom
18:00 ~ 21:00	晚餐　Dinner	

大会开幕　Opening Ceremony

时间：9月21日 8:30~9:30
Time: 21 September 8:30~9:30

地点：4F 翡翠宴会厅
Venue: 4F Jade Ballroom

大会开幕式 Opening Ceremony			
主持人：贺泓 Moderators: Hong HE			
时间　Time	内容　Event	嘉宾　Guest	单位　Organization
8:30 ~ 9:00	开幕致辞 Welcome Remarks	郝吉明 院士 Jiming HAO	清华大学 Tsinghua University
		杨龙 副司长 Long YANG	生态环境部 Ministry of Ecology and Environment of the People's Republic of China
		夏祖义 秘书长 Zuyi XIA	中国环境科学学会 Chinese Society For Environmental Sciences
		邹骥 首席执行官 Ji ZOU	能源基金会 Energy Foundation China
		晏波 局长 Bo YAN	上海市生态环境局 Shanghai Municipal Bureau of Ecology and Environment
9:00 ~ 9:30	合影 / 茶歇　Group Photo / Tea Break		

大会报告　Plenary Session

时间：9月21日 9:30~18:00
Time: 21 September 9:30~18:00

地点：4F 翡翠宴会厅
Venue: 4F Jade Ballroom

主旨报告 Plenary Presentation			
主持人：陶澍、王书肖 Moderators: Shu TAO, Shuxiao WANG			
时间　Time	报告题目　Title	报告人　Presenter	单位　Organization
9:30 ~ 9:55	影响大气污染控制决策的重要因素 Policy Considerations on Air Pollution Control	刘炳江 Bingjiang LIU	特邀嘉宾 Special Guest
9:55 ~ 10:20	基于健康保护的空气质量标准体系 Ambient Air Quality Standards for Health Protection	朱彤 院士 Tong ZHU	北京大学 Peking University
10:20 ~ 10:45	大气细颗粒毒理与健康危害 Toxicity and Health Risk of Atmospheric Fine Particle	江桂斌 院士 Guibin JIANG	中国科学院生态环境研究中心 Research Center for Eco-Environmental Sciences,CAS
10:45 ~ 11:10	加快绿色低碳科技创新，推动减污降碳协同治理 Accelerating innovation in green and low-carbon technologies for promoting synergistic reduction of pollution and carbon emissions	高翔 院士 Xiang GAO	浙江大学 Zhejiang University
11:10 ~ 11:35	大气中含氮有机气溶胶及其分子物种研究 Nitrogen-Containing Organics Aerosol and Molecular Species in the Atmosphere	陈建民 欧洲科学院院士 Jianmin CHEN	复旦大学 Fudan University
11:35 ~ 12:00	ABaCAS回顾和近期人工智能应用 ABaCAS historical overview and recent AI applications	Carey JANG 教授	华南理工大学 South China University of Technology
12:00 ~ 13:30	午餐　Lunch		

特邀报告 Invited Presentation			
主持人：邵敏、Havala PYE Moderators: Min SHAO, Havala PYE			
时间　Time	报告题目　Title	报告人　Presenter	单位　Organization
13:30 ~ 13:45	Air PM pollution and human health: a chemical–biological mixture perspective from sources to impacts	李向东 教授 Xiangdong LI	香港理工大学 The Hong Kong Polytechnic University
13:45 ~ 14:00	Adjoint Modeling of Spatially–Specific Health Benefits of $PM_{2.5}$–related Controls	Armistead RUSSELL	美国佐治亚理工学院 Georgia Institute of Technology
14:00 ~ 14:15	Environmental justice and public health implications of zero–emission vehicles: A comprehensive analysis in California	朱怡芳 教授 Yifang ZHU	美国加州大学洛杉矶分校 University of California, Los Angeles
14:15 ~ 14:30	大气环境超站在揭示污染成因中的作用 The role of atmospheric superstations in identifying the causes of pollution	胡敏 教授 Min HU	北京大学 Peking University
14:30 ~ 14:45	Climate mitigation of global energy infrastructure	关大博 教授 Dabo GUAN	清华大学 Tsinghua University
14:45 ~ 15:00	Future Air Quality in Northeast Asia under Carbon Neutrality	Jung–Hun WOO	韩国首尔大学 Seoul National University
15:00 ~ 15:15	Integration of Machine Learning and Street–Level Simulation for High–Resolution Street Pollution Forecasts	龚山陵 研究员 Shanling GONG	中国气象科学研究院 Chinese Academy of Meteorological Sciences
15:15 ~ 15:30	茶歇　Tea Break		

特邀报告 Invited Presentation			
主持人：伏晴艳、梁启明 Moderators: Qingyan FU, Kenneth LEUNG			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
15:30 ~ 15:45	强化源解析在空气质量管理中的应用 Air quality management and source apportionment	柴发合 研究员 Fahe CHAI	中国环境科学研究院 Chinese Research Academy of Environmental Sciences
15:45 ~ 16:00	Current studies of woodsmoke, pathogens and microplastics for tropospheric particle chemistry	Hartmut HERRMANN	德国莱布尼兹对流层研究所 Leibniz Institute for Tropospheric Research
16:00 ~ 16:15	Understanding the impact of human activity on air quality: A modeling look at aerosol pollution before and after the industrial revolution	王自发 研究员 Zifa WANG	中国科学院大气物理研究所 Institute of Atmospheric Physics, CAS
16:15 ~ 16:30	碳中和情景下未来气候变化对中国臭氧污染的影响及驱动因子 Impacts and drivers of future climate change on ozone pollution in China under carbon neutral pathway	廖宏 教授 Hong LIAO	南京信息工程大学 Nanjing University of Information Science and Technology
16:30 ~ 16:45	Describing reactive organic carbon with the Community Regional Atmospheric Chemistry Multiphase Mechanism (CRACMM)	Havala PYE	美国环保署 U.S. EPA
16:45 ~ 17:00	大气污染物与CO_2协同控制决策支持技术与路径评估 Development and application of a decision support system for the coordinated control of air pollutants and CO_2	王书肖 教授 Shuxiao WANG	清华大学 Tsinghua University
主旨报告 Plenary Presentation			
主持人：刘建国、张强 Moderators: Jianguo LIU, Qiang ZHANG			
17:00 ~ 17:30	China's pathway selection and strategic pursuit to achieve carbon neutrality in climate change mitigation	张小曳 院士 Xiaoye ZHANG	中国气象科学研究院 Chinese Academy of Meteorological Sciences
17:30 ~ 18:00	大气污染物与温室气体排放精细化动态表征：进展与展望 Highly-resolved and Dynamic Quantification of Air Pollutants and Greenhouse Gas Emissions: Progress and Perspectives	贺克斌 院士 Kebin HE	清华大学 Tsinghua University
18:00 ~ 21:00	晚餐 Dinner		

分会场一：碳污融合排放清单与溯源技术

Session 1: Emission inventory for atmospheric pollutants and greenhouse gases

时间：9月22日 8:30~12:00
Time: 22 September 8:30~12:00

地点：4F 翡翠宴会厅A
Venue: 4F Jade Ballroom A

分会场主席：张强、郑君瑜
Session chairs: Qiang ZHANG, Junyu ZHENG
召集人：黄成、赵瑜、郑博、黄志炯
Conveners: Cheng HUANG, Yu ZHAO, Bo ZHENG, Zhijiong HUANG

主持人：张强、赵瑜
Moderators: Qiang ZHANG, Yu ZHAO

时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
8:30 ~ 8:45	大气污染源解析技术发展与展望 Development and prospects of source apportionment techniquesfor air pollution	冯银厂 教授 Yinchang FENG	南开大学 Nankai University
8:45 ~ 9:00	炼油企业挥发性有机化合物排放因子和源谱测量研究 Emission Factors and Source Profiles of Volatile Organic Compounds in the Petroleum Refining Industry through On-Site Measurement from Multiple Refineries	谢绍东 教授 Shaodong XIE	北京大学 Peking University
9:00 ~ 9:15	大气氨减排潜力及其对区域$PM_{2.5}$污染的影响 Ammonia Emission Mitigation Potential and Its Impact on Regional $PM_{2.5}$ Air Pollution	张霖 研究员 Lin ZHANG	北京大学 Peking University
9:15 ~ 9:30	基于卫星的中国煤炭使用源吸收性气溶胶及气态污染物排放量化研究 Satellite-based quantification of absorbing aerosol and co-emitted gas emissions from Coal-Use in China	Jason COHEN	中国矿业大学 China University of Mining and Technology
9:30 ~ 9:45	热浪期间被低估的排放激增及其对空气质量的影响 Underappreciated emission spikes and impacts on air quality during heatwaves	朱雷 副教授 Lei ZHU	南方科技大学 Southern University of Science and Technology
9:45 ~ 10:00	基于地面多站点的氨排放清单评估研究 Assessment of Ammonia Emission Inventories Based on Multi-Site Observations	黄志炯 副研究员 Zhijiong HUANG	暨南大学 Jinan University
10:00 ~ 10:15	基于车载尾气监测系统的上海集卡碳排放量化研究 Study on the Determination of Carbon Emissions from Shanghai Container Trucks Based on Onboard Exhaust Monitoring System	何红弟 副教授 Hongdi HE	上海交通大学 Shanghai Jiao Tong University
10:15 ~ 10:30	茶歇 Tea Break		

主持人：叶代启、黄志炯 Moderators: Daiqi YE, Zhijiong HUANG			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
10:30 ~ 10:45	跨介质排放清单建立的现状与问题初探：以汞为例 Current Status and Challenges of Establishing Cross-Media Emission Inventories: A Case Study of Mercury	郑君瑜 教授 Junyu ZHENG	香港科技大学（广州） Hong Kong University of Science and Technology (Guangzhou)
10:45 ~ 11:00	我国空气污染及健康效应的行业与地区贡献年际变化 Changing sector and regional contributions to air pollution and health burden in China	赵瑜 教授 Yu ZHAO	南京大学 Nanjing University
11:00 ~ 11:15	大气污染源排放清单的校验和应用 Validation and Application of Atmospheric Pollutant Emission Inventories	薛志钢 / 营娜 研究员 Zhigang XUE Na YING	中国环境科学研究院 Chinese Research Academy of Environmental Sciences
11:15 ~ 11:30	基于近实时数据的中国典型行业排放驱动因素快速量化研究 Rapid quantifying the emission driver of typical industry based on the real-time daily data in China	褚旸晰 副研究员 Yangxi CHU	中国环境科学研究院 Chinese Research Academy of Environmental Sciences
11:30 ~ 11:45	我国建筑燃气甲醛排放特征与电气化改造负荷研究 Emission characteristics of formaldehyde from residential natural gas combustion and load of electrification	刘聪 副研究员 Cong LIU	东南大学 Southeast University
11:45 ~ 12:00	融合清单业务化编制方法研究 Integrated Methodology for Compiling Greenhouse Gas and Air Pollutant Emission Inventories	唐倩 副研究员 Qian TANG	生态环境部环境规划院 Chinese Academy of Environmental Planning
12:00 ~ 13:30	午餐 Lunch		

分会场二：污染源排放测量技术与应用

Session 2: Advancing technologies applied in source emission measurements

时间：9月22日 8:30~17:45
Time: 22 September 8:30~17:45

地点：4F 翡翠宴会厅B
Venue: 4F Jade Ballroom B

分会场主席：刘建国、蒋靖坤 Session chairs: Jianguo LIU, Jingkun JIANG 召集人：李相贤、刘通浩、王刚 Conveners: Xiangxian LI, Tonghao LIU, Gang WANG			
主持人：蒋靖坤 Moderators: Jingkun JIANG			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
8:30 ~ 8:45	大气污染源光学监测技术与示范 Optical monitoring techniques and applications for atmospheric pollution sources	刘建国 研究员 Jianguo LIU	中国科学院合肥物质科学研究院 Hefei Institutes of Physical Science, CAS
8:45 ~ 9:00	PTR–MS监测大气挥发性有机物浓度中的不确定性	王琳 教授 Lin WANG	复旦大学 Fudan University
9:00 ~ 9:15	基于现场实测的典型源大气污染物源排放特征与排放清单构建 Emission characteristics of hazardous air pollutants based on field measurements and emission inventory development	田贺忠 教授 Hezhong TIAN	北京师范大学 Beijing Normal University
9:15 ~ 9:30	民用炉灶不同燃烧阶段排放确定方法与实践 Methods and practices for determining emissions from different combustion stages of household stoves	李兴华 教授 Xinghua LI	北京航空航天大学 Beihang University
9:30 ~ 9:45	增强污染源多层级监测技术供给，回应减污降碳技术需求 Enhance the supply of multi–level monitoring technologies and respond to the demand for reduction of pollution and carbon emission	刘通浩 工程师 Tonghao LIU	中国环境监测总站 China National Environmental Monitoring Centre
9:45 ~ 10:00	污染源傅里叶变换红外光谱监测技术及应用研究 Research and application of pollution sources measurement based on FTIR technology	李相贤 副研究员 Xiangxian LI	中国科学院合肥物质科学研究院 Hefei Institutes of Physical Science, CAS
10:00 ~ 10:15	固定源超低排放监测挑战分析 Challenge analysis of ultra low emission monitoring for stationary sources	王刚 副教授 Gang WANG	中国石油大学（华东） China University of Petroleum (East China)
10:15 ~ 10:30	茶歇 Tea Break		

主持人：刘建国 Moderators: Jianguo LIU			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
10:30 ~ 10:45	固定源超低排放监测与质控研究 Research on Monitoring and Quality Control of Ultra–Low Emissions from Stationary Sources	蒋靖坤 教授 Jingkun JIANG	清华大学 Tsinghua University
10:45 ~ 11:00	农村实测和实验室模拟民用生物质燃烧的单颗粒排放特征研究 Study on the Emission Characteristics of Single Particles from Rural Field Measurements and Laboratory Simulations of Residential Biomass Combustion	李卫军 教授 Weijun LI	浙江大学 Zhejiang University
11:00 ~ 11:15	中国柴油车全挥发性范围有机污染排放测试及规律表征 Characterization of full–volatility organic emissions for diesel trucks in China	张少君 副教授 Shaojun ZHANG	清华大学 Tsinghua University
11:15 ~ 11:30	包装印刷行业VOCs排放特征与绩效分级指南研制 Characterization and Performance Grading of VOCs Emissions in the Packaging and Printing Industry	张新民 研究员 Xinmin ZHANG	中国环境科学研究院 Chinese Research Academy of Environmental Sciences
11:30 ~ 11:45	基于全二维色谱的固定源可凝结颗粒物有机组分研究 Characterization of organics in condensable particulate matter from stationary sources using comprehensive two–dimensional gas chromatography	安肇锦 博士后 Zhaojin AN	哈佛大学 Harvard University
11:45 ~ 12:00	基于实测的典型非道路移动机械黑炭吸光特性及其排放定量研究 Study on the optical properties and emission quantification of black carbon from typical non–road mobile machinery based on real–world measurements	毋波波 副教授 Bobo WU	北京工商大学 Beijing Technology and Business University
12:00 ~ 13:30	午餐 Lunch		

主持人：李相贤 Moderators: Xiangxian LI			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
13:30 ~ 13:45	第三极大气颗粒物模拟提高及来源解析 Improvement and Source Analysis of Atmospheric Particulate Matter Simulation in the Third Pole	张宏亮 教授 Hongliang ZHANG	复旦大学 Fudan University
13:45 ~ 14:00	大气污染源排放测量技术及应用 Measurement Technologies and Their Applications for Atmospheric Emission Sources	孔少飞 教授 Shaofei KONG	中国地质大学（武汉） China University of Geosciences (Wuhan)
14:00 ~ 14:15	京津冀石化行业VOCs排放特征、环境影响及健康风险评价 Volatile organic compounds emission characteristics, environmental impact and health risk assessments of the petrochemical industry in the Beijing–Tianjin–Hebei region.	吕喆 副研究员 Zhe LV	北京市生态环境保护科学研究院 Beijing Municipal Research Institute of Eco-Environmental Protection
14:15 ~ 14:30	源排放气溶胶非靶向有机指纹图谱识别技术与应用 Non-targeted organic aerosol fingerprint identification technology and application	霍耀强 副主任 Yaoqiang HUO	内蒙古工业大学 Inner Mongolia University of Technology
14:30 ~ 14:45	基于大数据的工业园区污染排放量大规模动态核算技术及应用 Big Data-Based Large-Scale Dynamic Accounting Technologies and Their Applications for Emission Sources in Industrial Parks	赵瀚森 Hansen ZHAO	江苏环保集团 Jiangsu Environmental Protection Group Co., Ltd
14:45 ~ 15:00	新一代工业污染物减排技术与监测需求 Emission reduction technology and monitoring requirements for new generation industrial pollutants	李鹏飞 教授级高工 Pengfei LI	中冶节能环保有限公司 Central Research Institute of Building and Construction Co., Ltd, Mcc Group
15:00 ~ 15:15	锌电解过程颗粒物产排特征 Pollution and emission characteristics of particulate matter from zinc electrolysis process	马子轸 副教授 Zizhen MA	青岛理工大学 Qingdao University of Technology
15:15 ~ 15:30	茶歇 Tea Break		

主持人：刘通浩 Moderators: Tonghao LIU			
时间　Time	报告题目　Title	报告人　Presenter	单位　Organization
15:30 ~ 15:45	可凝性污染物（SO_3/ CPM）测量方法研究 Study on Measurement Methods for Condensable Pollutants (SO_3/ CPM)	李玉忠 教授 Yuzhong LI	山东大学 Shandong University
15:45 ~ 16:00	固定源超低排放下可凝结颗粒物在线监测与质控技术 Online monitoring technology for condensable particulate matters from stationary plants under ultra–low emission requirements	李庆 教授 Qing LI	复旦大学 Fudan University
16:00 ~ 16:15	典型国六柴油车的氨气与有机胺排放 Ammonia and amine emissions from typical China VI diesel vehicles	刘安林 助理研究员 Anlin LIU	四川大学 Sichuan University
16:15 ~ 16:30	污染源监测面临的形势和对策建议 Current situation and countermeasures for pollution source monitoring	刘茂辉 工程师 Maohui LIU	天津市生态环境监测中心 Tianjin Eco–Environmental Monitoring Center
16:30 ~ 16:45	典型燃烧源气态亚硝酸瞬时排放特征及其影响因素研究 In–situ measurement of gaseous nitrous acid (HONO) emissions from typical urban combustion sources: characteristics and influencing factors	丁祥 工程师 Xiang DING	上海市环境科学研究院 Shanghai Academy of Enivronmental Sciences
16:45 ~ 17:00	无组织排放挥发性有机物精细溯源技术开发及应用 Fine traceability technology for unorganized emissions of volatile organic compounds	李泽晖 助理教授 Zehui LI	上海交通大学 Shanghai Jiao Tong University
17:00 ~ 17:15	污染源烟气中氨监测技术进展 Progress of monitoring technology for ammonia in flue gas from pollution sources	李峰 高级工程师 Feng LI	上海淳禧应用技术股份有限公司 Shanghai Alwaysbrong Application Technology Co. Ltd.
17:15 ~ 17:30	基于无人机的交通污染立体监测研究 Research on Three–Dimensional Monitoring of Traffic Pollution Using Drones	何红弟 副教授 Hongdi HE	上海交通大学 Shanghai Jiao Tong University
17:30 ~ 17:45	北京市道路尘负荷监测方法与排放特征分析 Analysis of monitoring methods and emission characteristics of silt loading in Beijing	赵芸程 工程师 Yuncheng ZHAO	北京市生态环境保护科学研究院 Beijing Municipal Research Institute of Eco–Environmental Protection
18:00 ~ 21:00	晚餐　Dinner		

分会场三：大气复合污染和温室气体立体监测
Session 3: “Ground–air–space” monitoring for air pollutants and greenhouse gases

时间：9月22日 8:30~12:00
Time: 22 September 8:30~12:00

地点：4F 晶榕晶枫厅
Venue: 4F Banyan & Maple

分会场主席：陈建民、谢品华
Session chairs: Jianmin CHEN, Pinhua XIE
召集人：刘诚、郭松、胡仁志、李国、楼晟荣
Conveners: Cheng LIU, Song GUO, Renzhi HU, Guo LI, Shengrong LOU

主持人：郭松、李国
Moderators: Song GUO, Guo LI

时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
8:30 ~ 8:45	大气自由基及关键前体物的光学监测技术 Optical monitoring techniques for free radicals and key precursors in the atmosphere	谢品华 研究员 Pinhua XIE	中国科学院合肥物质科学研究院 Hefei Institutes of Physical Science, CAS
8:45 ~ 9:00	面向降碳减污的超光谱精准遥感与人工智能技术 Hyperspectral Precision Remote Sensing and AI Technology for Carbon Reduction and Pollution Control	刘诚 教授 Cheng LIU	中国科学技术大学 University of Science and Technology of China
9:00 ~ 9:15	青藏高原颗粒物吸湿性和混合态垂直分布 Vertical distribution of mixing state and hygroscopicity of particulate matter on the Tibetan Plateau	马楠 教授 Nan MA	暨南大学 Jinan University
9:15 ~ 9:30	上黄观测站大气组分变化特征研究 Characterization of atmospheric component changes at Shanghuang Observatory	潘小乐 研究员 Xiaole PAN	中国科学院大气物理研究所 Institute of Atmospheric Physics, CAS
9:30 ~ 9:45	陆源输送与海洋释放相互作用的大气复合污染研究 Study on Atmospheric Complex Pollution from the Interaction between Land Source Transport and Marine Release	黄侃 研究员 Kan HUANG	复旦大学 Fudan University
9:45 ~ 10:00	四川盆地气溶胶差异性来源成因与健康效应 Sources and Health Effects of Aerosol Variability in the Sichuan Basin	陈阳 研究员 Yang CHEN	中国科学院重庆绿色智能技术研究院 Chongqing Institute of Green and Intelligent Technology, CAS
10:00 ~ 10:15	杭州湾滩涂岛臭氧及前体物污染特征分析 Study on the Characteristics Ozone and Its Precursor on Tanhu Island in the Hangzhou Bay Area	霍俊涛 工程师 Juntao HUO	上海市环境监测中心 Shanghai Environmental Monitoring Center
10:15 ~ 10:30	茶歇 Tea Break		

主持人：谢品华、刘诚 Moderators: Pinhua XIE, Cheng LIU			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
10:30 ~ 10:45	Aqueous production of sulfur–containing aerosols from nitroaromatic compounds and SO_2 in wintertime urban haze	陈敏东 教授 Mindong CHEN	南京信息工程大学 Nanjing University of Information Science and Technology
10:45 ~ 11:00	城市边界层理化结构探测技术与方法 Techniques and methods for detecting physical and chemical structures of the urban boundary layer	孙业乐 研究员 Yele SUN	中国科学院大气物理研究所 Institute of Atmospheric Physics, CAS
11:00 ~ 11:15	广东省大气污染和温室气体协同监测网络建设进展和思路 The advancements and strategies in the construction of Guangdong Province's coordinated monitoring network for air pollution and greenhouse gases	陈多宏 教授级高工 Duohong CHEN	广东省生态环境监测中心 Guangdong Provincial Ecological Environment Monitoring Center
11:15 ~ 11:30	Determine emissions and their spatial distributions of important perfluorinated greenhouse gases in China based on atmospheric measurements from multiple sites	安民得 Minde AN	美国麻省理工学院 Massachusetts Institute of Technology
11:30 ~ 11:45	Observations and accounting of atmospheric pollutants and greenhouse gases emission from ecosystems	余倩 助理教授 Qian YU	南京大学 Nanjing University
11:45 ~ 12:00	基于FTIR光谱技术的碳污协同监测及其应用 Carbon Pollution Collaborative Monitoring and Its Application Based on FTIR Spectroscopy	秦玉胜 Yusheng QIN	中国科学院合肥物质科学研究院 Hefei Institutes of Physical Science, CAS
12:00 ~ 13:30	午餐 Lunch		

分会场四：空气质量模拟与控制成本效益分析

Session 4: Air quality modelling and cost–benefit analysis for air pollution control

时间：9月22日 13:30~17:45
Time: 22 September 13:30~17:45

地点：4F 翡翠宴会厅A
Venue: 4F Jade Ballroom A

分会场主席：王书肖、王自发 Session chairs: Shuxiao WANG, Zifa WANG 召集人：胡建林、应琦、赖信志、David WONG、赵斌 Conveners: Jianlin HU, Qi YING, Hsin–Chih LAI, David WONG, Bin ZHAO			
主持人：赵斌、赖信志 Moderators: Bin ZHAO, Hsin–Chih LAI			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
13:30 ~ 13:45	WRF–GC区域气象–化学耦合模式的开发与应用 Development and application of regional meteorology–chemistry online coupled model WRF–GC	傅宗玫 教授 Zongmei FU	南方科技大学 Southern University of Science and Technology
13:45 ~ 14:00	The cost benefit analysis of electrification of mobile sources in the public domain: a start of promoting transportation structure	谭钦文 教授级高工 Qinwen TAN	成都市环境保护科学研究院 Chengdu Academy of Environmental Protection Sciences
14:00 ~ 14:15	Estimating location–specific health co–benefits of CO_2 mitigation using the adjoint of CMAQ	Amir HAKAMI	加拿大卡尔顿大学 Carleton University
14:15 ~ 14:30	Recent advancement of EPA's global air quality modeling system: MPAS–CMAQ	David WONG	美国环保署 U.S. EPA
14:30 ~ 14:45	How to quantify the impact of aerosol on sky color	王建栋 教授 Jiandong WANG	南京信息工程大学 Nanjing University of Information Science and Technology
14:45 ~ 15:00	Improved understanding of interactions between extreme weather events and air quality based on a high–resolution Earth system model	高阳 教授 Yang GAO	中国海洋大学 Ocean University of China
15:00 ~ 15:15	Co–benefit analysis of air quality management plans and public health in Taiwan	赖信志 教授 Hsin–Chih LAI	台湾长荣大学 Taiwan Chang Jung Christian University
15:15 ~ 15:30	茶歇 Tea Break		

主持人：胡建林、David WONG Moderators: Jianlin HU, David WONG			
时间　Time	报告题目　Title	报告人　Presenter	单位　Organization
15:30 ~ 15:45	以基本消除华北$PM_{2.5}$重污染天气为目标的优化调控模拟研究 Optimal emission control plan aiming to basically eliminate $PM_{2.5}$ heavy pollution in North China	李杰 研究员 Jie LI	中国科学院大气物理研究所 Institute of Atmospheric Physics, CAS
15:45 ~ 16:00	Emissions from Structural Fires at the Wildland–Urban Interface: From Carpetsto Couches & Shingles to Studs	Shantanu JATHAR	美国科罗拉多州立大学 Colorado State University
16:00 ~ 16:15	中国空气质量模式性能评估基准研究 Recommendations on benchmarks for chemical transport model applications in China	李莉 研究员 Li LI	上海大学 Shanghai University
16:15 ~ 16:30	Comparative Study on the Effectiveness and Applicability of Multi–Model Ozone Forecasting in BTHR and YRD	王威 教授级高工 Wei WANG	中国环境监测总站 China National Environmental Monitoring Center
16:30 ~ 16:45	上海市臭氧污染模拟及成因分析 Simulation and Cause Analysis of Ozone Pollution in Shanghai	王茜 高级工程师 Qian WANG	上海市环境监测中心 Shanghai Environmental Monitoring Center
16:45 ~ 17:00	Factors causing long–term trends in precursor emissions and ambient ozone concentrations in Japan	Chatani SATORU	日本国立环境研究所 National Institute for Environmental Studies
17:00 ~ 17:15	Utilizing the CMAQ Adjoint Model for Air Pollution Assessment in China	沈惠中 副教授 Huizhong SHEN	南方科技大学 Southern University of Science and Technology
17:15 ~ 17:30	Application of ABaCAS in Developing Air Quality Attainment Plan for Linfen, Shanxi	邱雄辉 副教授 Xionghui QIU	北京交通大学 Beijing Jiaotong University
17:30 ~ 17:45	Analysis of air pollution event days and weather patterns in Taiwan	萧旻娟 助理教授 Min–Chuan HSIAO	台湾长荣大学 Taiwan Chang Jung Christian University
18:00 ~ 21:00	晚餐　Dinner		

分会场五：碳污协同增效路径

Session 5: Roadmap to synergistic control of air pollutants and carbon

时间：9月22日 13:30~17:45
Time: 22 September 13:30~17:45

地点：4F 翡翠宴会厅C
Venue: 4F Jade Ballroom C

分会场主席：严刚、鲁玺
Session chairs: Gang YAN, Xi LU
召集人：戴瀚程、王海鲲、偶阳、张玉强、张玉璇
Conveners: Hancheng DAI, Haikun WANG, Yang OU, Yuqiang ZHANG, Yuxuan ZHANG
主持人：王海鲲、张玉强
Moderators: Haikun WANG, Yuqiang ZHANG

时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
13:30 ~ 13:45	Atmospheric reactive halogens reshaped by the clean energy policy on the North China Plain	王韬 教授 Tao WANG	香港理工大学 The Hong Kong Polytechnic University
13:45 ~ 14:00	烟气减污降碳协同增效技术途径与费效分析 Technological Strategies and Cost–Effectiveness Analysis for Synergistic Emission Reduction and Carbon Mitigation in Flue Gas	李俊华 教授 Junhua LI	清华大学 Tsinghua University
14:00 ~ 14:15	甲烷排放的未来演变路径：硫酸盐带来的挑战和机遇 Neglected large impacts of sulfate on present and future methane emissions	沈路 助理教授 Lu SHEN	北京大学 Peking University
14:15 ~ 14:30	Decarbonization will lead to more equitable air quality	朱曙鹏 研究员 Shupeng ZHU	浙江大学 Zhejiang University
14:30 ~ 14:45	农业机械减污降碳协同增效路径 Growing but overlooked carbon and air pollutants emissions from agricultural machinery in China	庄明浩 副教授 Minghao ZHUANG	中国农业大学 China Agricultural University
14:45 ~ 15:00	活性氮减排策略在未来气候政策情景下改善全球空气质量的潜力 Potentials of aspirational nitrogen interventions in improving future global air quality underclimate mitigation scenarios	郭怡鑫 助理教授 Yixin GUO	香港科技大学（广州） Hong Kong University of Science and Technology (Guangzhou)
15:00 ~ 15:15	Target Setting and Pathway Optimization for Synergistic Control of Air Pollutants and Greenhouse Gases	冯悦怡 助理研究员 Yueyi FENG	生态环境部环境规划院 Chinese Academy of Environmental Planning
15:15 ~ 15:30	茶歇 Tea Break		

主持人：张玉强、张玉璇 Moderators: Yuqiang ZHANG, Yuxuan ZHANG			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
15:30 ~ 15:45	An Integrated Assessment Tool for Enhancing Climate Mitigation and Air Quality Improvement	张少辉 研究员 Shaohui ZHANG	奥地利国际应用系统分析研究所 International Institute for Applied Systems Analysis
15:45 ~ 16:00	碳污协同溯源和减排路径研究 Source attribution of carbon and air pollution and their mitigation	史国良 教授 Guoliang SHI	南开大学 Nankai University
16:00 ~ 16:15	Cost–effective transition pathways for key industries	同丹 副教授 Dan TONG	清华大学 Tsinghua University
16:15 ~ 16:30	中国北方地区减污降碳健康协同影响研究 Health co–benefits of carbon reduction in Northern China	谢杨 / 徐萌 副教授 Yang XIE / Meng XU	北京航空航天大学 Beihang University
16:30 ~ 16:45	中国钢铁水泥行业碳中和路径及环境影响研究 Carbon–neutral pathways and environmental impacts in China's steel and cement industries	任明 讲师 Ming REN	中国石油大学（北京） China University of Petroleum (Beijing)
16:45 ~ 17:00	中国交通部门耦合电力和氢能部门实现碳中和目标的协同减污效应分析 Study on the synergistic effects of pollutant reduction from carbon neutrality in China's transportation sector	方艳茹 助理研究员 Yanru FANG	中国环境科学研究院 Chinese Research Academy of Environmental Sciences
17:00 ~ 17:15	上海市机动车尾气排放特征及监控 Characteristics and Supervision of VehicleExhaust Emissions in Shanghai	段玉森 高级工程师 Yusen DUAN	上海市减污降碳管理运行技术中心 Shanghai Technology Center for Reduction of Pollution and Carbon Emissions
17:15 ~ 17:30	芳香烃和NOx光反应过程中HONO形成新机制 New Mechanism for HONO Formation in the Photoreaction of Aromatic Hydrocarbons and NOx	陈天增 副研究员 Tianzeng CHEN	中国科学院生态环境研究中心 Research Center for Eco–Environmental Sciences,CAS
17:30 ~ 17:45	城镇化背景下我国大气污染及其健康效应变化 Secondary pollution and its health effects in response to urbanization	张照磊 Zhaolei ZHANG	复旦大学 Fudan Univeristy
18:00 ~ 21:00	晚餐 Dinner		

分会场六：城市大气$PM_{2.5}$和臭氧污染防控

Session 6: Continuous reduction of urban $PM_{2.5}$ and ozone pollution

时间：9月22日 13:30~18:00
Time: 22 September 13:30~18:00

地点：4F 晶榕晶枫厅
Venue: 4F Banyan & Maple

分会场主席：柴发合、伏晴艳 Session chairs: Fahe CHAI, Qingyan FU 召集人：雷国强、胡京南、宁淼、黄丹丹 Conveners: Peter LOUIE, Jingnan HU, Miao NING, Dan Dan HUANG			
主持人：伏晴艳、雷国强 Moderators: Qingyan FU, Peter LOUIE			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
13:30 ~ 13:45	Inter-Comparison of Measured and Modeled Ozone Production Rates	邵敏 教授 Min SHAO	暨南大学 Jinan University
13:45 ~ 14:00	香港地区温室气体初步分析 Preliminary analysis of greenhouse gases in Hong Kong	雷国强 博士 Peter LOUIE	香港环保署 Hong Kong Environmental Protection Department
14:00 ~ 14:15	New ideas of environmental air quality research in the era of big data	李顺诚 教授 Shuncheng LI	香港科技大学（广州） Hong Kong University of Science and Technology (Guangzhou)
14:15 ~ 14:30	我国发展污染物和温室气体航测面临的挑战与展望 The Current Challenges in Developing Aircraft-Based Measurements of Air Pollutants and Greenhouse Gases in China	吴志军 教授 Zhijun WU	北京大学 Peking University
14:30 ~ 14:45	不同天气型下湖北省$PM_{2.5}$和臭氧污染特征及防控实践研究 Research on the Characterization, and Prevention and Control Practice of $PM_{2.5}$ and Ozone Pollution in Hubei Province under Different Weather Types	刘巍 教授级高工 Wei LIU	湖北省生态环境科学研究院 Hubei Provincial Academy of Eco-Environmental Sciences
14:45 ~ 15:00	Integrated Analysis of Air Quality-Vegetation-Health Effects of Future Air Pollution Control Strategies: A case study of ZiBo	李莉 教授 Li LI	上海大学 Shanghai University
15:00 ~ 15:15	四川省道路交通碳污协同防控路径研究 Research on the co-benefits of pollution reduction and carbon reduction in the field of urban road transportation in Sichuan Province	李媛 Yuan LI	四川省生态环境科学研究院 Sichuan Academy of Eco-Environmental Sciences
15:15 ~ 15:30	茶歇 Tea Break		

主持人：修光利、黄丹丹 Moderators: Guangli XIU, Dan Dan HUANG			
时间　Time	报告题目　Title	报告人　Presenter	单位　Organization
15:30 ~ 15:45	典型城市人为单萜烯排放对臭氧生成的贡献 The Role of Anthropogenic Monoterpenes in Ozone Formation in a Chinese Megacity	王雪梅 教授 Xuemei WANG	暨南大学 Jinan University
15:45 ~ 16:00	环杭州湾地区排放因子特征研究 Study on the Characteristics of Emission Factors in the Hangzhou Bay Area	伏晴艳 教授 Qingyan FU	上海市环境科学研究院 Shanghai Academy of Environmental Sciences
16:00 ~ 16:15	Synergistic Strategies for Air Pollution and Climate Change in California	罗东民 博士 Dongmin LUO	美国加州资源环境局 California Air Resources Board
16:15 ~ 16:30	城市道路移动源高排放快速识别方法研究及对路边空气质量影响 Fast identification of high emitter for mobile source emission and roadside air quality management	宁治 教授 Zhi NING	香港科技大学 Hong Kong University of Science and Technology
16:30 ~ 16:45	The observation of ozone formation and short–term transportation in north bank area of Hangzhou Bay	修光利 教授 Guangli XIU	华东理工大学 East China University of Science and Technology
16:45 ~ 17:00	Sources of organic aerosol in wintertime Shanghai based on online molecular composition	赵德峰 教授 Defeng ZHAO	复旦大学 Fudan University
17:00 ~ 17:15	钢铁区域大气VOCs来源解析及臭氧生成机制研究 Source analysis of atmospheric VOCs and the mechanisms of ozone formation in steelmaking regions	程金平 教授 Jinping CHENG	上海交通大学 Shanghai Jiao Tong University
17:15 ~ 17:30	Drivers of Increasing Ozone during the Two Phases of Clean Air Actions in China 2013–2020	刘宇希 Yuxi LIU	生态环境部环境规划院 Chinese Academy of Environmental Panning
17:30 ~ 17:45	四川省川南地区臭氧生成敏感性及防控路径研究 Study on ozone formation sensitivity and pollution control in Southern Sichuan Province	韩丽 高级工程师 Li HAN	四川省生态环境科学研究院 Sichuan Academy of Eco–Environmental Sciences
17:45 ~ 18:00	Temporal Variations of Surface Ozone and NOx from Tropical Urban of Sarawak, Malaysia	Hartini Mahidin	The National University of Malaysia
18:00 ~ 18:15	Airvoice company (UAE, USA): High–density platforms for monitoring and forecasting air quality in the city and region	Slava Lapachev	Airvioce Corp.
18:15 ~ 21:00	晚餐　Dinner		

分会场七：大气环境与健康

Session 7: Atmospheric environment and health

时间：9月22日 8:30~12:30
Time: 22 September 8:30~12:30

地点：4F 董事会议厅
Venue: 4F Boardroom

分会场主席：阚海东、安太成 Session chairs: Haidong KAN, Taicheng AN 召集人：李庆、刘颖君、顾建伟 Conveners: Qing LI, Yingjun LIU, Jianwei GU			
主持人：安太成、李庆 Moderators: Taicheng AN, Qing LI			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
8:30 ~ 8:45	环境健康风险识别与评价 Identification and assessment of environmental health risks	徐顺清 教授 Shunqing XU	海南大学 Hainan University
8:45 ~ 9:00	阻燃剂类新污染物毒性效应及健康风险 Toxicity effects and health risks posed by emerging flame retardant pollutants	李辉 教授 Hui LI	上海大学 Shanghai University
9:00 ~ 9:15	识别$PM_{2.5}$中低质量贡献但高毒性贡献的组分 Identifying low–concentration yet high–potency toxic components in $PM_{2.5}$	金灵 教授 Ling JIN	香港理工大学 The Hong Kong Polytechnic University
9:15 ~ 9:30	沙尘气溶胶氧化潜势特征研究 Study on the oxidative potential characteristics of mineral aerosol	陈庆彩 教授 Qingcai CHEN	陕西科技大学 Shaanxi University of Science & Technology
9:30 ~ 9:42	大气颗粒物及其典型新污染物成分的人肺细胞毒性效应 Toxicological effects of atmospheric particulate matters and associated emerging contaminants on human lung cells	罗小三 教授 Xiaosan LUO	南京信息工程大学 Nanjing University of Information Science and Technology
9:42 ~ 9:54	空气污染物发育毒性靶点与组分作用机制 The Developmental Toxicity Targets and Mechanisms of Airborne Pollutants Exposure	岳慧峰 教授 Huifeng YUE	山西大学 Shanxi University
9:54 ~ 10:06	民用固体燃料燃烧排放污染物的人体内外暴露及代谢特征 Internal and external exposure of heavy metals and PAHs in size–resolved PMs from household solid fuel combustion source	徐红梅 教授 Hongmei XU	西安交通大学 Xi'an Jiaotong University
10:06 ~ 10:20	茶歇 Tea Break		

主持人：刘颖君、顾建伟 Moderators: Yingjun LIU, Jianwei GU			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
10:20 ~ 10:35	Systematic Assessment of Health Effects Induced by Exposure to Airborne $PM_{2.5}$ Water–Soluble Inorganic Ions	郝柯 教授 Ke HAO	同济大学 Tongji University
10:35 ~ 10:50	大气黑碳颗粒的老化及潜在健康效应影响 Atmospheric aging on soot particles and the potential health effects	尚静 教授 Jing SHANG	北京大学 Peking University
10:50 ~ 11:05	Cardiovascular effects of indoor ozone chemistry: Preliminary results from a panel study in Lhasa	刘颖君 教授 Yingjun LIU	北京大学 Peking University
11:05 ~ 11:17	气候变化下高温热浪和污染暴露的健康和经济风险评估 Evaluating the Impact of Climate Change on Heat Waves and Pollution Exposure: A Comprehensive Health and Economic Risk Assessment	朱曙鹏 研究员 Shupeng ZHU	浙江大学 Zhejiang University
11:17 ~ 11:29	气溶胶酸度对不良出生结局影响的初步探讨 Effects of Aerosol acidity on low birthweight: a preliminary study	韩斌 研究员 Bin HAN	中国环境科学研究院 Chinese Research Academy of Environmental Sciences
11:29 ~ 11:41	大气细颗粒物引发心血管代谢异常的毒性机制 Toxicological mechanisms of ambient $PM_{2.5}$–induced abnormal cardiovascular metabolism	徐燕意 副教授 Yanyi XU	复旦大学 Fudan University
11:41 ~ 11:53	生物气溶胶环境过程及其健康影响 Environmental processes of bioaerosol and its associated health effects	申芳霞 副教授 Fangxia SHEN	北京航空航天大学 Beihang University
11:53 ~ 12:05	Alzheimer–like changes and related mechanisms in SH–SY5Y cells promoted by ultrafine black carbon	尚羽 副教授 Yu SHANG	上海大学 Shanghai University
12:05 ~ 12:17	Multi–organ toxicity caused by $PM_{2.5}$ in elderly with cardiovascular diseases: the role of PAHs played in the most polluted episodes in Xi'an	孙健 副教授 Jian SUN	西安交通大学 Xi'an Jiaotong University
12:17 ~ 12:29	系统毒理学方法在大气细颗粒物健康风险评估中的应用 Health Risk Assessment of Atmospheric Fine Particulate Matter Based on Systems Toxicology	王正陆 副教授 Zhenglu WANG	四川大学华西医院 West China Hospital of Sichuan University
12:30 ~ 13:30	午餐 Lunch		

分会场八：大气环境大数据与人工智能

Session 8: Big data and artificial intelligence technology in the atmospheric environment

时间：9月22日 13:30~17:45
Time: 22 September 13:30~17:45

地点：4F 董事会议厅
Venue: 4F Boardroom

分会场主席：关大博、李健军
Session chairs: Dabo GUAN, Jianjun LI
召集人：朱云、高健、张宏亮、程真、詹宇
Conveners: Yun ZHU, Jian GAO, Hongliang ZHANG, Zhen CHENG, Yu ZHAN

主持人：关大博、程真
Moderators: Dabo GUAN, Zhen CHENG

时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
13:30 ~ 13:45	空气质量管理人工智能应用研究 Advancing Air Quality Management and research through AI application	朱云 教授 Yun ZHU	华南理工大学 South China University of Technology
13:45 ~ 14:00	环境科学中的人工智能教学引擎初探——以大气环境为主题的案例研究 Preliminary Exploration of AI Teaching Engines in Environmental Science: A Case Study on Atmospheric Environment	李楠 副教授 Nan LI	清华大学 Tsinghua University
14:00 ~ 14:15	基于傅里叶神经算子的化学传输模型仿真 Chemical transport model emulation based on Fourier Neural Operator	程真 研究员 Zhen CHENG	上海交通大学 Shanghai Jiao Tong University
14:15 ~ 14:30	全球尺度大气污染参数机器学习反演与重建 Global scale atmospheric pollution parameter inversion and reconstruction with machine learning	袁强强 教授 Qiangqiang YUAN	武汉大学 Wuhan University
14:30 ~ 14:45	机器学习时空建模中的“概念漂移”问题及对策研究 Addressing concept drift in spatiotemporal machine learning models	詹宇 副教授 Yu ZHAN	四川大学 Sichuan University
14:45 ~ 15:00	大气复合污染关键非线性问题的理解及其对机器学习方法的影响 Understanding the Key Nonlinear Issues of Atmospheric Compound Pollution and Their Impact on Machine Learning Methods	史凯 教授 Kai SHI	西华师范大学 China West Normal University
15:00 ~ 15:15	MYATMOS: novel method to analyzed big data with stochastic and an artificial intelligent approach	Noor Zaitun Yahaya	马来西亚清洁空气论坛协会 The Clean Air Forum Society of Malaysia
15:15 ~ 15:30	茶歇 Tea Break		

主持人：李健军、朱云 Moderators: Jianjun LI, Yun ZHU			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
15:30 ~ 15:45	数据驱动的环境管理智能建模方法研究 An Intelligent Data–Driven Method for Environmental Management	杨光飞 教授 Guangfei YANG	大连理工大学 Dalian University of Technology
15:45 ~ 16:00	LCA碳足迹与电碳耦合技术 Life Cycle Carbon Footprint and Electric Carbon Coupling Technology	姚尚衡 研究员 Shangheng YAO	中国南方电网能源发展研究院 Energy Development Research Institute of China Southern Power Grid
16:00 ~ 16:15	利用机器学习探索气候增暖背景下城市异戊二烯的变化及其影响 Exploring Changes in Urban Isoprene andIts Impact under the Background of Climate Warming Using Machine Learning	王楠 副研究员 Nan WANG	四川大学 Sichuan University
16:15 ~ 16:30	多源数据深度学习融合框架支持的无缝臭氧浓度遥感估算 Seamless estimation of ozone concentrations using a multisource data deep learning fusion framework	李同文 副教授 Tongwen LI	中山大学 Sun Yat–Sen University
16:30 ~ 16:45	数据驱动的大气污染遥感反演研究进展与思考 Research progress and some key issues about data–driven air pollution remote sensing	马宗伟 副教授 Zongwei MA	南京大学 Nanjing University
16:45 ~ 17:00	我国地面能见度与颗粒物浓度时空无缝智能感知及应用 Spatiotemporal Seamless Intelligent Sensing of Surface Visibility and Particulate Matter Concentrations in China and Their Application	桂柯 副研究员 Ke GUI	中国气象科学研究院 Chinese Academy of Meteorological Sciences
17:00 ~ 17:15	基于深度学习的区域臭氧污染预测及成因分析 Prediction and Cause Analysis of Regional Ozone Pollution Based on Deep Learning	高松 副研究员 Song GAO	上海大学 Shanghai University
17:15 ~ 17:30	Multiscale Temporal Variations of Atmospheric Mercury Distinguished by the Hilbert–Huang Transform Analysis Reveals Multiple El Nin o–Southern Oscillation Links	Ly Sy Phu NGUYEN	越南胡志明市国立大学 VNUHCM–University of Science
17:30 ~ 17:45	Exploring Construction Solutions for Intelligent Agent Systems in the Ecological Environment Domain: A Case Study of Nexus AI	黄远奕 博士后 / 首席科学家 Yuanyi HUANG	华南理工大学 / 华云创信（广东）生态环境科技有限公司 South China University of Technology/Cloud & Information (Guangdong) Eco–Environment Science and Technology., LTD.
18:00 ~ 21:00	晚餐 Dinner		

分会场九：大气霾化学机制

Session 9: Atmospheric haze chemistry

时间：9月22日 8:30~12:00
Time: 22 September 8:30~12:00

地点：4F 翡翠宴会厅C
Venue: 4F Jade Ballroom C

分会场主席：贺泓、葛茂发 Session chairs: Hong HE, Maofa GE 召集人：陈春城、王炜罡、楚碧武、吴清茹、郑光洁 Conveners: Chuncheng CHEN, Weigang WANG, Biwu CHU, Qingru WU, Guangjie ZHENG			
主持人：陈春城、吴清茹 Moderators: Chuncheng CHEN, Qingru WU			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
8:30 ~ 8:45	大气霾化学界面反应机制研究进展 Research progress on interface reaction mechanism in atmospheric haze chemistry	马庆鑫 研究员 Qingxin MA	中国科学院生态环境研究中心 Research Center for Eco–Environmental Sciences, CAS
8:45 ~ 9:00	Formation and Synergistic Joint Control Strategies for $PM_{2.5}$ and Ozone Pollution from the Atmospheric Oxidation Perspective	陆克定 教授 Keding LU	北京大学 Peking University
9:00 ~ 9:15	气液界面质谱分析 Mass Spectrometry at the Air–water Interface	张新星 教授 Xinxing ZHANG	南开大学 Nankai University
9:15 ~ 9:30	Enhanced Ozone Oxidation Pathway to Sulfate aerosols in East Asia after China's SO_2 Emission Control: direct evidence from $\Delta^{17}O$	章炎麟 教授 Yanlin ZHANG	南京信息工程大学 Nanjing University of Information Science and Technology
9:30 ~ 9:45	Surface–area dependence of sulfur (IV) oxidation rate in aerosol microdroplets	刘湃 副教授 Pai LIU	北京理工大学 Beijing Institute of Technology
9:45 ~ 10:00	Multiphase Buffering by Ammonia Sustains Sulfate Production in Atmospheric Aerosols	郑光洁 助理教授 Guangjie ZHENG	清华大学 Tsinghua University
10:00 ~ 10:15	Divergent Impacts of Biomass Burning and Fossil Fuel Combustion Aerosols on Fog–Cloud Microphysics and Chemistry: Novel Insights From Advanced Aerosol–Fog Sampling	旷烨 教授 Ye KUANG	暨南大学 Jinan University
10:15 ~ 10:30	茶歇 Tea Break		

主持人：王炜罡、郑光洁 Moderators: Weigang WANG, Guangjie ZHENG			
时间 Time	报告题目 Title	报告人 Presenter	单位 Organization
10:30 ~ 10:45	大气霾化学的实验室模拟技术 Simulation techniques for laboratory investigation of atmospheric haze chemistry	杜林 教授 Lin DU	山东大学 Shandong University
10:45 ~ 11:00	含氮有机气溶胶的二次生成与老化机制 Formation and aging of nitrogen–containing organic aerosol	黄汝锦 研究员 Rujin HUANG	中国科学院地球环境研究所 Institute of Earth Environment, CAS
11:00 ~ 11:15	The mechanism of new particle formation induced by iodic acid	张秀辉 教授 Xiuhui ZHANG	北京理工大学 Beijing Institute of Technology
11:15 ~ 11:30	生物源VOCs影响典型多环芳烃氧化生成SOA机制 Impact of Biogenic VOCs on Secondary Organic Aeroso Formation from PAHs oxidation	郭松 教授 Song GUO	北京大学 Peking University
11:30 ~ 11:45	Nocturnal Atmospheric Synergistic Oxidation Reduces the Formation of Low–volatility Organic Compounds from Biogenic Emissions	赵岳 教授 Yue ZHAO	上海交通大学 Shanghai Jiao Tong University
11:45 ~ 12:00	Modeling the formation and aging process of secondary organic aerosols from two typical megacities of China: results with new observational constraints	胡伟伟 研究员 Weiwei HU	中国科学院广州地化所 Guangzhou Institute of Geochemistry, CAS
12:00 ~ 13:30	午餐 Lunch		

ABaCAS培训会　ABaCAS Training Workshop

时间：9月20日 9:00~17:35
Time: 20 September 9:00~17:35

地点：4F 晶榕晶枫厅
Venue: 4F Banyan & Maple

主持人：朱云　Moderator: Yun ZHU		
时间　Time	报告题目　Title	主讲人　Presenter
9:00 ~ 9:05	欢迎致辞 Welcome Remarks	伏晴艳 / 上海市环境科学研究院 Qingyan FU Shanghai Academy of Environmental Sciences
9:05 ~ 9:55	Overview, Progress, and Applications of the Air Pollution Control Cost–Benefit and Compliance Assessment System (ABaCAS)	王书肖 / 清华大学 张志诚 / 华南理工大学 Shuxiao WANG / Tsinghua University Zhicheng ZHANG / South China University of Technology
9:55 ~ 10:25	Main Functions of ABaCAS and Trends in AI Applications	朱云 / 华南理工大学 Yun ZHU / South China University of Technology
10:25 ~ 10:40	茶歇 / ABaCAS演示准备　Tea Break	
10:45 ~ 11:10	ABaCAS长三角案例介绍 Introduction to the ABaCAS –Yangtze River Delta Case	安静宇 / 上海市环境科学研究院 Jingyu AN Shanghai Academy of Environmental Sciences
11:10 ~ 12:00	ABaCAS–EI排放清单介绍 Introduction to the ABaCAS –EI Emission Inventory	郑昊天 / 南京大学　李胜悦 / 清华大学 Haotian ZHENG / Nanjing University Shengyue LI / Tsinghua University
12:00 ~ 14:00	午餐　Lunch	
14:00 ~ 15:15	Real–time Response Principles and Tools for Air Quality Emission Control (RSM–VAT) Training	董赵鑫 / 清华大学 李金盈 / 华南理工大学 Zhaoxin DONG / Tsinghua University Jinying LI / South China University of Technology
15:15 ~ 15:45	Overview, Demonstration, and Functional Operation Training of the Dynamic Source Contribution Analysis Tool for Air Pollution (FAST–CE)	王韶翊 / 华南理工大学 Shaoyi WANG South China University of Technology
15:45 ~ 16:00	茶歇　Tea Break	
16:00 ~ 16:35	Overview, demonstration, and functional operation training of the Multi–Pollutant Air Quality Planning Tool (Nexus)	龙世程 / 华南理工大学 Shicheng LONG South China University of Technology
16:35 ~ 17:05	Overview, Demonstration, and Functional Operation Training on the Air Quality Standard Assessment Tool (SMAT–CE)	张萌萌 / 华南理工大学 Mengmeng ZHANG South China University of Technology
17:05 ~ 17:35	ABaCAS系统及其应用讨论和提问　/　Discussions	
18:00 ~ 21:00	晚餐　Dinner	

青年论坛　Youth Forum

时间：9月21日 19:00~22:30
Time: 21 September 19:00~22:30

地点：4F 晶榕晶枫厅
Venue: 4F Banyan & Maple

青年论坛：口头汇报　Youth Forum: Oral Presentation 主持人：张宏亮、朱书慧　Moderators: Hongliang ZHANG, Shuhui ZHU		
时间　Time	报告题目　Title	报告人　Presenter
19:00 ~ 19:10	Modelling of the Impact of Marine Chlorine Emissions on Secondary Organic Aerosols over the North China Plain	高照齐 山东大学 Zhaoqi GAO Shandong University
19:10 ~ 19:20	The Nexus of International Trade and Green Energy Integration: Shaping Emission Pathways in China's Aluminum Cycle	贾舒婷 华北电力大学 Shuting JIA North China Electric Power University
19:20 ~ 19:30	Joint effect of short–term exposure to fine particulate matter and ozone on mortality: A time series study in 272 Chinese cities	姜宜萱 复旦大学 Yixuan JIANG Fudan University
19:30 ~ 19:40	Greenhouse Gas and Organic Volatile Gas Emissions from China's Oil and Gas Supply Chain	刘嘉 清华大学 Jia LIU Tsinghua University
19:40 ~ 19:50	Regional Meteorological Feature Extraction Enhances Deep Learning for Extended 120–hour $PM_{2.5}$ Forecasting	刘莘义 四川大学 Xinyi LIU Sichuan University
19:50 ~ 20:00	A Featured–Species–Based Inverse Dispersion Method for Estimating Emission Intensities of Volatile Organic Compounds in the Chemical Industry	刘艳君 南京大学 Yanjun LIU Nanjing University
20:00 ~ 20:10	我国空气质量改善与公众感受差异性比较 Public Perception and Official Data Discrepancies Regarding Air Quality Improvement in China in the Past Decade	赵丹玥 上海交通大学 Danyue ZHAO Shanghai Jiao Tong University
20:10 ~ 20:20	Long–term variation and influencing factors of hydroxymethylsulfonate (HMS) in winter in Beijing	马涛 广东工业大学 Tao MA Guangdong University of Technology
20:20 ~ 20:30	Towards a Holistic Understanding of New Particle Formation in China	申杰文 清华大学 Jiewen SHEN Tsinghua University

时间 Time	报告题目 Title	报告人 Presenter
20:30 ~ 20:40	An ensemble machine learning model to enhance extrapolation ability of predicting coarse particulate matter with high resolutions in China	史苏 复旦大学 Su SHI Fudan University
20:40 ~ 20:50	酸度通过促进金属溶解驱动大气颗粒物毒性效应改变 Acidity influences the toxic effects of atmospheric particulate matter by enhancing metal dissolution	宋曦雯 复旦大学 Xiwen SONG Fudan University
20:50 ~ 21:00	A review of machine lequality: Overlooked but important issues	唐蝶 四川大学 Die TANG Sichuan University
21:00 ~ 21:10	Spatiotemporal Evolution of CFCs–HCFCs–HFCs Emissions from China's Refrigeration Industry Driven by Domestic Demand and Exportation	许思恒 华北电力大学 Siheng XU North China Electric Power University
21:10 ~ 21:20	Long–term variability in black carbon emissions constrained by gap–filled absorption aerosol optical depth and associated premature mortality in China	赵文鑫 南京大学 Wenxin ZHAO Nanjing University
21:20 ~ 21:30	Enhanced heterogeneous decomposition of inorganic nitrogen compounds on deliquesced aerosol particles	郑昊天 南京大学 Haotian ZHENG Nanjing University
21:30 ~ 21:40	Multi–media Flows and Emissions of Hazardous Trace Elements in China's Coal System	刘洋浩 华北电力大学 Yanghao LIU North China Electric Power University
21:40 ~ 21:50	Studies of Heatwaves and Extreme Precipitation under Climate Change: Based on High–Resolution Earth System Models	郭修文 中国海洋大学 Xiuwen GUO Ocean University of China
21:50 ~ 22:00	空气质量监测系统数智化运维建设方案探讨 Discussion on the construction scheme of "intelligent operation and maintenance of air quality monitoring system".	王向东 副总经理 河南省奥瑞环保科技股份有限公司 Xiangdong WANG Henan Aorui Environmental Protection Technology Co., Ltd.
22:00 ~ 22:15	Publishing with the Environmental Science journals of the Royal Society of Chemistry	Grace THOBURN 副主编 Royal Society of Chemistry
22:15 ~ 22:30	青年论坛颁奖礼 Youth Forum Award Ceremony	

青年论坛：海报展示　Youth Forum: Poster		
序号　ID	海报题目　Title	姓名　Name
1	A Study on the Development of an Equation for the Transition Value of the Photochemical Indicator O_3 / NO_Y	蔡长佑 台湾云林科技大学 Chang–You TSAI Taiwan Yunlin University of Science and Technology
2	Predicting ozone episodes in China in the 2050s using extreme value models	Fengwei WAN 北京大学 Peking University
3	Analysis of the Source Characteristics of Volatile Organic Compounds in Typical Industries in Southwest China	胡晓 福建师范大学 Xiao HU Fujian Normal University
4	Global wildfire emissions of full–volatility organic compounds from 1997 to 2023	黄律引 清华大学 Lvyin HUANG Tsinghua University
5	Integrated Benefits of Synergistically Reducing Air Pollutants and Carbon Dioxide in China	李胜悦 清华大学 Shengyue LI Tsinghua University
6	Co–benefits of climate mitigation for food security in China	李守秀 中国海洋大学 Shouxiu LI Ocean University of China
7	Modeling the Formation of Organic Compounds across Full Volatility Ranges and Their Contribution to Nanoparticle Growth in a Polluted Atmosphere	李泽祺 清华大学 Zeqi LI Tsinghua University

序号 ID	报告题目 Title	姓名 Name
8	Comparative Study on VOC Emission Inventory of Typical Petrochemical Enterprises in Fujian and Emission Reduction Potentials	刘月华 福建师范大学 Yuehua LIU Fujian Normal University
9	Potential Benefits Evaluation of $PM_{2.5}$ Control Measures: A Case Study in Taiwan	姚永真 台湾工业技术研究院 Yung–Chen YAO Taiwan Industrial Technology Research Institute
10	A Case Study on Methodological Approaches for Integrating CMAQ Data and AI Models	聂士杰 台湾工业技术研究院 Shi–Jie NIEH Taiwan Industrial Technology Research Institute
11	Response of organic aerosol in Beijing to emission reductions: Blue Winter Olympics vs. Gray Lockdown Haze	曲启鹏 清华大学 Qipeng QU Tsinghua University
12	High Spatial Resolution Anthropogenic Air Pollutants and Carbon Dioxide Emission Inventory in China in 2020	师喆喆 清华大学 Zhezhe SHI Tsinghua University
13	Development of a nonlinear response surface model linking point source emissions to $PM_{2.5}$ concentrations	宋倩 清华大学 Qian SONG Tsinghua University
15	Gestational Exposure to Air Pollution and $PM_{2.5}$ Constituents Impair Intrauterine Fetal Growth Trajectory	赵蓬勃 同济大学 Pengbo ZHAO Tongji University
15	Pathways for Synergistic Control of Multi–Media Pollution and Carbon Emission in Cities: The Case Study of Chengdu	欧阳代为 清华大学 Daiwei OUYANG Tsinghua University

部分报告的英文名称仅供参考。

城市漫步

周边交通：地铁2号线（江苏路站）；地铁3、4号线（延安西路站）；地铁10、11号线（交通大学站）；71路公交

推荐景点：

武康路

推荐理由：武康路是中国历史文化名街之一。武康路建筑集聚了不同历史时期、国家和建筑风格的代表作品，展示了上海独特的海派文化，并成为宝贵的文化遗产，见证了东西方文化的交融和发展。

景点距离：1.5公里

推荐交通方式：共享单车或打车出行

推荐行走路线：武康大楼—武康路—安福路

上生新所

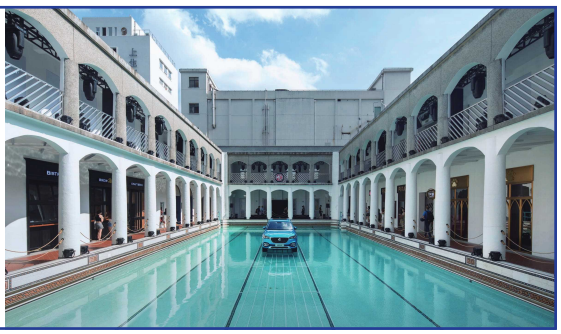
推荐理由：“上生·新所”坐落于延安西路1262号，比邻番禺路。内有孙科别墅、哥伦比亚乡村俱乐部、海军俱乐部、泳池以及多栋工业建筑。

景点距离：1公里

推荐交通方式：步行或共享单车

推荐行走路线：

定西路—番禺路—上生新所—法华镇路—新华路



外　滩

推荐理由：外滩，是上海近代城市开始的起点。外滩见证了上海从一个小渔村发展成为国际大都市的历程。外滩建筑群被誉为“万国建筑博览群”，这些建筑不仅展示了不同时期、不同风格的建筑艺术，也体现了中西文化的交融与碰撞。

景点距离：6.5公里

推荐交通方式：71路公交或打车出行

推荐行走路线：外滩信号塔—上海总会—海关大楼—和平饭店—中国银行—黄浦公园

城隍庙

推荐理由：上海城隍庙，始建于明代永乐年间（1403年–1424年），总面积约三千余平方米，与老城隍庙小吃、荷花池、湖心亭及九曲桥组成了独具特色的上海“老城厢”旅游文化名片。

景点距离：7.5公里

推荐交通方式：71路公交或打车出行

推荐行走路线：上海城隍庙—老凤祥—华宝楼—上海梨膏糖—南翔馒头店—湖心亭

City Walk

Transportation:Metro Line 2 (Jiangsu Road Station); Metro Line 3、4（West Yan'an Road Station）; Metro Line 10 and 11 (Jiaotong University Station); Bus No. 71

Recommended attractions:

Wukang Road

Wukang Road is one of the famous historical and cultural streets in China. There are representative buildings from different historical periods, countries and architectural styles on Wukang Road, displaying unique Shanghai-style culture. These buildings become a valuable cultural heritage, witnessing the blending and development of Eastern and Western cultures.

Distance: 1.5 km

Recommended transportation: Shared bicycles or taxi

Recommended walking route:

Wukang Building - Wukang Road - Anfu Road

Columbia Circles

Reason for recommendation: "Columbia Circles" is located at No. 1262 Yan'an West Road, adjacent to Panyu Road. These buildings include Sunke Villa, Columbia Country Club, Navy Club, swimming pools and many industrial buildings.

Attraction distance: 1 km

Recommended transportation: walking or shared bicycles

Recommended walking route:

Dingxi Road - Panyu Road - Columbia Circles - Fahuazhen Road - Xinhua Road

The Bund

The Bund is the starting point of the modern city of Shanghai. The Bund has witnessed Shanghai's development from a small fishing village to an international metropolis. The Bund architectural complex is known as the "Exotic building clusters in the Bund of Shanghai". These buildings not only display the architectural art of different periods and styles, but also reflect the blending and collision of Chinese and Western cultures.

Distance to attractions: 6.5 km

Recommended transportation: Bus No. 71 or taxi

Recommended walking route:

Bund - Signal - Tower - Shanghai General Association - Customs Building - Peace Hotel - Bank of China - Huangpu Park

Town God's Temple

Town God's Temple was built in the Yongle period of the Ming Dynasty (1403-1424), with a total area about 3,000 square meters. It forms a unique Shanghai's "Old Town" tourism and cultural business card, with the snacks of the Old City God Temple, the lotus pond, the Huxin Pavilion and the Jiuqu Bridge.

Distance to attractions: 7.5 km

Recommended transportation: Bus No. 71 or taxi

Recommended walking routes:

City God's Temple - Lao Fengxiang and Huabao Tower - Shanghai pear sugar food store - Nanxiang Steamed Bun Restaurant - Huxin Pavilion

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