

# The Chinese University of Hong Kong Department of Geography and Resource Management

will present a seminar

by

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## Aerosol Pollution in Asia and Its Interactions with Health and Climate

### Abstract:

With rapidly expanding economic and industrial developments and tremendous increases in energy consumption, China and India are facing serious aerosol pollution. Aerosols with small sizes can directly enter the human body and adhere to the lungs to cause respiratory and cardiovascular diseases. Aerosols also modulate the climate and ecosystems via aerosol-cloud-radiation interactions. Yet, the poor understanding of aerosol pollution in Asia and its interactions with health and climate impedes the design and implementation of effective pollution control measures. Combining atmospheric modeling and observations, we clarified the roles of meteorological conditions, regional transport, and secondary aerosol formation in the occurrence of extreme haze events in Asia. The short-term and long-term exposure to PM<sub>2.5</sub> and its source contribution were also estimated using air quality model outputs, and surface observations were combined with modeling to reduce the uncertainty in the estimates. We quantified how aerosol interacts with weather to aggravate pollution episodes, source contributions to aerosol radiative forcing, and how climate patterns affect the formation of aerosol pollution. The results provide insights into the formation of aerosol pollution in Asia, as well as the basis and implications for pollution control.

### About the Speaker:

Meng Gao is an Assistant Professor at the Department of Geography at Hong Kong Baptist University. Before moving to Hong Kong, he was a postdoc fellow at Harvard University, and he received a Ph.D. in Chemical Engineering from the University of Iowa. His research interests include atmospheric chemistry modeling, chemistry-climate interactions, climate change mitigation and environmental health. His recent publications appear in the *Science Advances*, *Environmental International*, *Environmental Science & Technology*, and *Atmospheric Chemistry and Physics*.

**Language: English**

**Date: 17 October 2019 (Thursday)**

**Time: 4:30-6:00pm**

**Venue: Room 221**

**Chen Kou Bun Building**

**Chung Chi College**

**~All are Welcome~**

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