



Preface to Special Issue

Aerosol Impact on Physical, Chemical and Biological Processes in Southeast Asia and the Maritime Continent

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During my first ever visit to Southeast Asia, via Singapore, in 2009, a colleague casually remarked how the region and surrounding archipelago, colloquially referred to as the Maritime Continent, represented the greatest natural laboratory on the planet. It was a remarkable statement, which I blew off almost immediately. Having lived at the doorstep of the Arctic for five years in Alaska, and otherwise having conducted field research on five continents, I thought the statement audacious at best and foolhardy at worst. The planet consists of many diverse and special regional ecological and biogenic systems. Each is unique in its own right. Given the varying global sensitivities and response to a warming climate and increasing anthropogenic activity, the distinguishing of one region as being more unique than all others seemed wholly inappropriate. It didn't take me too long, however, to realize how dreadfully wrong I was. Within the bounds of this special issue of *Aerosol and Air Quality Research*, I am confident that it will quickly become clear why Southeast Asia and its surrounding islands are so exceptionally compelling for physical study.

On behalf of my fellow guest editors, Professors Guey-Rong Sheu of the National Central University in Taiwan and Somporn Chantara of Chiang Mai University in Thailand, I am pleased to introduce *Aerosol Impact on Physical, Chemical and Biological Processes in Southeast Asia and the Maritime Continent*. The twenty-seven papers contained herein reflect new and innovative research characterizing this alluring region, originating from nine different countries, which notably includes China, India, Indonesia, Malaysia, Singapore and Taiwan as representatives of their home domain. In motivating this collection, our goal was to capture both the intriguing nature of the regional biogenic system and the diversity of ongoing research conducted by local scientists, including the active collaboration of international interests. We trust that you will agree that we have met and well exceeded this goal. For fellow scientists, this volume represents the state-of-the-art in understanding equatorial and tropical aerosol and chemical processes, and the confluence between pristine vegetated terrestrial ecosystems and encroaching urban industrial influences. For educators and civil interests, it is a practical introduction to the difficulties in reconciling regional biospheric sensitivities to climate change and increasing anthropogenic impact, and the challenges in developing and sustaining long-term measurements and multi-national partnerships.

The volume is separated into seven focus areas. The first paper is an overview paper (Tsai *et al.*) describing the BASELInE component of the Seven Southeast Asian Studies (7-SEAS) initiative, which has motivated aerosol, chemical and meteorological study of the region since 2009. The remaining six sections are divided into aerosol and atmospheric chemistry (seven papers), air toxics (two), aerosol physics and instrumentation (three), optical/radiative properties and remote sensing (nine), air pollution and health effects (three) and air pollution modeling (two). 7-SEAS research is highly prominent, as roughly seventeen of the papers reflect some connection to this broader project (e.g., Chantara *et al.*; Lin *et al.*). The essential influence of NASA, as well, is also clear, with work inspired by field operations supported by the agency found across multiple papers (e.g., Loftus *et al.*; Pantina *et al.*; Sayer *et al.*). Still, much of the volume reflects more local-scale initiative, and the commitment to resolving questions relevant on sub-regional scales that motivate resident scientists and drive internal interests (e.g., Che *et al.*; Chew *et al.*, Kusumaningtyas *et al.*; Oozeer *et al.*; Srivastava

et al.). The beneficial influence of NASA and other international partners on current and pending regional study cannot be understated. But, the pulse of Southeast Asian science can be best understood by considering these principal offerings.

We are indebted to all of the authors who have submitted original work to this volume, including those supporting the journal with work not selected for publication. Further, to all of our colleagues within the community who donated their time to support the peer review process, you remain the backbone of scientific publishing and communications. You are the unsung heroes, and we are grateful for the many vigorous and productive discussions with our authors that significantly improved the papers and overall volume. Finally, to overseeing Editor-in-Chief, Dr. Neng-Huei Lin at the National Central University in Taiwan, and the administrative support provided by AAQR, we thank you all for your guidance and belief in our actually pulling this whole thing off. As the journal and its international visibility continue growing, we hope that you will reflect upon this volume as an important marker, not just of the significance of the region, but as a consequential measure of the progress made in nurturing the journals voice within the community.

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