

Interactive comment on “Aerosol meteorology and Philippine receptor observations of Maritime Continent aerosol emissions for the 2012 7SEAS southwest monsoon intensive study” by Jeffrey S. Reid et al.

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Received and published: 6 June 2016

The role of biomass burning aerosols in the meteorological and radiative processes of the Maritime Continent is an important research topic, especially given the amount of regional activity around forest clearing for large plantations and related biomass burning. The 7SEAS initiative provides direly needed information, much of it required to improve climate system and meteorological models. Therefore the information presented in this MS is important to the larger community.

The main assertion of the MS is that there are higher resolution meteorological phe-

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nomena that greatly influence the production, transport and impact of aerosols produced primarily by biomass burning in and around the Maritime Continent. These phenomena that were observed by the 2012 7SEAS research cruise are not adequately captured and reflected by current climate and meteorological models. The hope is that the observations provided by the 7SEAS can help inform, refine and ultimately improve these models. These goals are of great value to the larger atmospheric science community.

While of great value, this reviewer has found the current structure of the MS as impeding readability. This reviewer believes that moderate changes to the structure, especially in the introduction could significantly improve readability and better support the authors' key points.

This reviewer believes that an explanation earlier on in the MS that the MC, not unlike elsewhere, is impacted by the interactions of a set of nested set of phenomena of varying temporal and spatial scales (e.g. from climatic/planetary scales to diurnal/smaller scale weather phenomena - island breezes, squall lines, etc.). Given observational constraints (both logistical (lack of intensive observational campaigns and shipboard obs.) and climatic (e.g. cloud cover)), the observations needed to demonstrate the importance of these interacting phenomena and their impacts on aerosol cloud dynamics have been lacking prior to the 7SEAS IOCs in 2011 and 2012.

As presented in the MS, this reviewer understands that 7SEAS is able to best stratify the impacts of these different phenomena because of its unique long-term, low intensity observing/monitoring activities (e.g. AERONET) embedded in which are two intensive observational periods related to research cruises during the early biomass burning and late biomass burning seasons (2011 and 2012 cruises, respectively).

While the authors have the challenge of how to structure the presentation of general/climatological findings, seasonal findings and higher resolution findings from the 2012 research cruise, this reviewer finds the MS as presented to be long and cumber-

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some to follow at times.

For the sake of readability, this reviewer would suggest breaking this large MS into part one and part 2 – Part one being an overview of the 7SEAS 2012 Research Cruise (including sampling complement/instrumentation, etc.) and how that Cruise is situated in terms of climatological and seasonal observations. Part two could focus more on the observed higher frequency phenomena and in depth discussion – in this reviewer's opinion, this would greatly improve the readability and furthermore, drive home the importance of the 7SEAS stratification strategy. Such changes would also reduce some of the repetition thereby cutting the length to a more manageable length.

Regarding findings of the impacts of squall lines on the processing of local and regional atmospheric composition, this reviewer notes that such observations are consistent with those that have been found for remote regions of the Amazon.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-214, 2016.

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