

Review of “Simultaneous retrievals of biomass-burning aerosols and trace gases from the ultraviolet to near-infrared over northern Thailand during the 2019 pre-monsoon season” by Ukkyo Jeong, Si-Chee Tsay, Nai-Yung Christina Hsu, David M. Giles, John W. Cooper, Jaehwa Lee, Robert J. Swap, Brent N. Holben, James J. Butler, Sheng-Hsiang Wang, Somporn Chantara, Hyunkee Hong, Donghee Kim, and Jhoon Kim

Recommendation: This paper presents a careful analysis of the optical properties of biomass-burning aerosol particles and selected trace gases in northern Thailand based on ground-based observations. It nicely characterizes the aerosol optical thickness, absorption properties, and size characteristics, and where relevant, compares to comparable measurements by the well-characterized AERONET sun/sky radiometer. The text is quite clear and much improvement in the presentation would be accomplished by attention to improving the figures, scales, and labels. I recommend this paper be accepted for publication with only minor editorial changes, especially with regard to figure quality suitable for publication.

General Comments:

1. This important paper is generally well written and easy to follow, but confusion easily arises when referring to the figures (and tables), that could be improved for publication.

Major Comments:

1. The labels on the axes of the many Figures use too small a font size, and they are not easily readable (e.g., Figure 11, 12, 14). Attention should be given to readability. Since many of the figures may be published on a single column rather than across two columns, attention should be given to all font sizes:
 - Figures 11 and 12 – The labels on the axes are too small, and the legends in each panel that show statistics are even smaller. It is not obvious how to make them more readable as there is a lot of information in the legends, but it makes the figures hard to decipher without enlarging the figure on a computer.
 - Figure 14 – The labels in the legend on Figure 14b are too small to decipher, as they show the results for 3 wavelengths.
 - Figures A1 and A2 – the legends and axes labels are also too small to read easily.

Minor Comments:

1. Page 2, line 51 – change ‘its absorption’ to ‘their absorption.’
2. Page 7, line 199 – change ‘SMART-s is’ to ‘SMART-s are.’
3. Page 18, line 568 – ALH is not defined at this, its first us. Please define Aerosol Layer

Height (ALH) when first used.

4. Page 18, line 589 – reference to the solar zenith angle being ‘low’ should probably change to ‘small’ to make sure it is clear that it is high sun and small solar zenith angle (if I understand it correctly).
5. Page 24, line 758 – Change ‘Jhon Cooper’ to ‘John Cooper.’