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Department of Atmospheric Sciences Seminar Announcement

Department of Atmospheric Sciences, S.O.E.S.T., University of Hawai'i at Mānoa
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Summer atmospheric heat sources over the western-central Tibetan Plateau

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Date: Wednesday, April 10, 2019
Refreshments: 3:00pm at MSB courtyard
Cookies, Coffee & Tea Provided
Seminar Time: 3:30pm
Location: Marine Sciences Building, MSB 100

Abstract:

Multiple bias-corrected top-quality reanalysis datasets, gauge-based observations, and selected satellite products are synthetically employed to revisit the climatology and variability of the summer atmospheric heat sources over the Tibetan Plateau (TP). Verification-based selection and ensemble-mean method are utilized to combine various datasets. Different from previous works, this study pays special attention to estimating the total heat source (TH) and its components over the data-void western plateau (70° - 85°E), including surface sensible heat (SH), latent heat released by precipitation (LH), and net radiation flux (RD).

Consistent with previous studies, the climatology of summer SH (LH) typically increases (decreases) from southeast to northwest. Generally, LH dominates TH over most of the TP. We find that during the period of 1984-2006, TH shows insignificant trends over the eastern and central TP, whereas exhibits an evident increasing trend over the western TP. The year-to-year variation of TH over the central-eastern TP is highly correlated with that of LH, but this is not the case over the western TP. It is also worth noting that the variations of TH in each summer month are not significantly correlated with each other, and thus future study of interannual variation of the TP heat sources should consider the remarkable month-to-month variations.