

MODULATION OF THE PHILIPPINE SOUTHWEST MONSOON BY INTRASEASONAL OSCILLATIONS AND INDIAN SUMMER TELECONNECTIONS

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ABSTRACT

The Philippine southwest monsoon (SWM) is a component of the western North Pacific summer monsoon (WNPSM), one of the monsoon regions within the broader Asian summer monsoon (ASM). The intraseasonal variability of SWM is known to be modulated by intraseasonal oscillations such as the MJO and BSISO, but the influence of teleconnections from other monsoon regions is understudied. Thus, this study will investigate the modulation of SWM by the Madden-Julian Oscillation (MJO), boreal summer intraseasonal oscillation, and teleconnections from the Indian summer monsoon (ISM). Using the Local Southwest Monsoon Index (LSWMI) to represent SWM and All-India Rainfall Index (AIRI) to represent ISM, the study first will evaluate ISM in representing intraseasonal variability and trends of SWM rainfall. Statistical analyses will be utilized to examine the relationships between SWM and respective phases of MJO and BSISO. Composite analyses will be applied to describe the physical mechanisms between SWM, MJO, BSISO, and ISM. By identifying mechanisms and drivers of SWM variability, this study seeks to contribute to the current understanding of local monsoon dynamics and improve monsoon monitoring and prediction.

Keywords: *Philippine southwest monsoon, Local Southwest Monsoon Index, MJO, BSISO, Indian summer monsoon, All-India Rainfall Index*