

# **Contrasting Relationship between Tropical Western North Pacific Convection and Rainfall over East Asia during Indian Ocean Warm and Cold Summers**

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Using daily data, this study compares the subseasonal seesaw relationship between anomalous tropical western North Pacific (WNP) convection and anomalous rainfall over subtropical East Asia during boreal summers (June-August) in which the Indian Ocean (IO) sea surface temperature is either warmer or colder than normal. It is found that the precipitation anomalies over central-eastern China (25°–35°N, 110°–120°E) associated with the anomalous tropical WNP convection activities during the IO cold summers are weaker and less evident compared to that in the IO warm summers, indicating the seesaw relationship in the IO cold summers becomes obscure. This contrasting seesaw relationship between the IO warm and cold summers is attributed to different patterns of anomalous moisture transportation and vertical motion over central-eastern China. The anomalous circulations associated with the anomalous tropical WNP convection [the Pacific–Japan (PJ) pattern] during the IO warm and cold summers show that, relative to the IO warm summers, the Japan action center of the PJ pattern has an evident northwestward displacement in the IO cold summers. It is argued that this northwestward displacement of the Japan action center plays a key role in the formation of the distinct seesaw relationship through modifying the anomalous moisture transportation and vertical motion.

Key words: Pacific-Japan pattern, East Asia, rainfall, Indian Ocean

## **References (if needed)**

Song, J., and C. Y. Li, 2014: Contrasting Relationship between Tropical Western North Pacific Convection and Rainfall over East Asia during Indian Ocean Warm and Cold Summers. *J. Climate*, **27**, 2562-2576.