



Role of Rossby wave breaking in the west Pacific teleconnection

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The dynamical link between the west Pacific (WP) teleconnection and Rossby wave breaking (RWB) events is analyzed during winter months using ERA40 reanalysis data from 1957 to 2002. The WP pattern which is characterized by latitudinal fluctuations of the Pacific jet is closely linked to variations in the nature of RWB, similarly to the North Atlantic Oscillation. More anticyclonic (cyclonic) RWBs than usual occur in the Central Pacific during the positive (negative) WP phase when the Pacific jet is more to the north (south) than usual.

Time lag daily composites show that before the occurrence of an anticyclonic RWB event, WP anomalies close to the positive phase preexist that are then reinforced during the breaking leading to an increase in the WP index even few days after the peak of the event. Cyclonic RWB events have similar but opposite effects on the WP pattern since they trigger and maintain the negative phase. Finally, a comparison with the RWB anomalies of the Pacific-North American (PNA) teleconnection is provided.