

Tropical Cyclone Induced Precipitation in the East Asia

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Tropical cyclone induced precipitation (TCP) in the East Asia is evaluated, using Asian Precipitation - Highly-Resolved Observational Data Integration Towards Evaluation (APHRODITE) daily gridded precipitation. Here, TCP is defined as the precipitation when the TC center approaches within 8 degree from each grid point. The TC position information is derived from the best track data of Japan Meteorological Agency (JMA). The mean state for 1981 to 2007 is discussed. The largest annual TCP is found in the eastern Taiwan, the western Luzon, and the south-western Japan, revealing 500 mm/yr or more. The large amount is localized in these areas, and other areas show the less amount. It is interesting that the most of the areas facing the sea on the east side show larger annual TCP than in the west side. Luzon is only exception, and the larger annual TCP is found in the west side. In these 3 areas, the annual maximum of daily TCP exceeds 200 mm/day in a maximum. This fact indicates that the heavy rainfall potential due to TCs is especially large in the three areas. The contribution of annual TCP to total precipitation is also evaluated. The contribution is the largest in the eastern Taiwan and the western Luzon, showing 35% in a maximum. The second largest is found in Japan showing 20%. In the three areas, the potential of heavy rainfall due to TCs is significant, and it is also found that TCs are important water resource in these areas.

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