

Climatic features of the water vapor transport around East Asia during June and September

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The climatic features of Water Vapor Transport (WVT), which is closely related to precipitation in the middle latitudes around East Asia, are investigated using reanalysis data in June and September. The maximum pole-ward WVT is formed along the continental coast in June around 25N, although the maximum locates over the western Pacific Ocean in September. The maximum amount of WVT in June is more than twice of that in September. Although water vapor is quasi-stationary transported in June, it is intermittently transported in September synchronized to the movement of typhoon. The large amount of the pole-ward water vapor is transported by the southerly wind in the eastern side of typhoons and the migration of typhoon itself. In order to estimate the typhoon effect on the pole-ward WVT, we investigated the term forming the strong pole-ward WVT synchronized to the movement of typhoon, and defined the term when the center of typhoon is in the Region A (20N-40N, 120E-150E) as the typhoon term. In September, the pole-ward WVT through Segment B (25N, 130E-150E) in the typhoon term is about 84% of that in the total term, although the typhoon term occupied only about 39% of the 20-year accumulated term from 1980 to 1999. It means that the climatic pole-ward WVT is greatly influenced by the typhoon. It is concluded that the contribution of typhoon is indispensable for the formation of the climatic atmospheric field around East Asia in September.