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高解像度日平均降水量データから得た東アジア域の夏季降水季節進行の長期変化

Changes in the seasonal march of the East Asian summer monsoon rainfall analysed in highly resoluted daily gridded data

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A highly-resoluted gridded precipitation dataset based on rain gauge observation data network is analyzed and published by the project named Asian Precipitation - Highly-Resoluted Observational Data Integration Towards Evaluation of the Water Resources (APHRODITE's Water Resources; Yatagai et al, 2009).
As a part of the APHRODITE project, historical(1900-) highly resoluted (0.05x0.05 degree) daily precipitation data for Japanese land area is developed by kamiguchi et al.(2010).
Daily historical gridded precipitation products are useful to evaluate changes in the seasonal march of rainfall as well as extreme rainfall events.

In this study, changes in the seasonal march and heavy rainfall of the East Asian summer monsoon is analysed by using APHRO_MA (dataset for monsoon Asia).
Furthermore, APHRO_JP, historical highly resoluted gridded precipitation dataset is analysed over Japan.

Meiyu starts in the middle of May in southern China, and the frontal zone migrates northward. Then Baiu starts in Japan in the middle of June, Changma starts in late June. Distrubution and amount of the precipitation is comparable to the CMAP rainfall.
In the southern China, precipitation amount in the first half of June decreases in the late 20th century. Development and northward migration of the Meiyu front is earlier in 1981-2000 than 19 61-1980. The precipitation over the southwestern part of Japan increases in the late 20th century. That is correspondent with the results of global warming simulation (Kusuniki and Mizuta, 2008; Yoshizaki et al., 2005). Baiu starts earlier and ends later in 1981-2000 than 1961-1980, while several breaks are found in the longer rainy season.

In China, heavy rainfall (over 100mm/day) tends to decrease while tend to increase in Japan and Korea recent 40 years. In Japan, heavy rainfall events increase in the beginning of Baiu and late summer (September) brought from typhoons and autumn rain.
In the mid summer, monsoon break becomes shorter and unclear.

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