



## **Extreme climate changes in South Korea simulated by RegCM4 with high-resolution based on the RCP scenarios**

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It is well known that the intensity and frequency of extreme weather events over East Asia have been significantly increased. As a result, interests on the changing pattern of extreme events are significantly increased in a changing climate. Representative Concentration Pathways (RCP) are the latest emission scenarios recommended to use for the fifth assessment report of Intergovernmental Panel on Climate Change (IPCC). In this study, long term simulations for current (1979-2010) and future (2019-2050) climate over North-East Asian region were performed using RegCM4 with 12.5 km resolution driven by HadGEM2-AO under IPCC RCPs 8.5/4.5 provided by the KMA (Korea Meteorological Administration). We will investigate the extreme climate change over South Korea simulated by RegCM4 using the current climate data (1986-2005) and future climate data (2031-2050). Two types definition of extreme climate is used the threshold methods based on the intensity and frequency. The first method is the number of days with extreme events (five categories: frost, hot, wet, dry and tropical night days) exceeding absolute threshold values. And the second method is the average of the highest/lowest 5% values at the each station for each year exceeding percentile thresholds values. For the validation of RegCM4 extreme climate simulations for current period (1986-2005) over South-Korea, the climate stations daily data (precipitation, maximum/minimum temperature) will be used from KMA. We will focus on the analysis the spatial distribution change, temporal variation and trend of intensity and frequency of the defined extreme climate over South Korea. The results of projected extreme climate in South-Korea will be discussed in the presentation.