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Changes of surface temperature and precipitation in climate indices and extremes over Republic of Korea

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This research carries out to analyze the daily precipitation and surface temperature datasets in Republic of Korea, which helps us understand a trend of climate change over this region. The results are come from analysis of the daily precipitation and surface temperature datasets observed at 6 weather stations of the Korea Meteorological Administration (KMA) for the past 10 0 years. In order to examine the changing trend of individual climate elements, climatic indices (tropical days/nights, heating/cooling degree days and daily precipitation intensity, etc.) and extremes (monthly maximum 1-day precipitation, consecutive 5-day precipitation, warm and cold spell days and extremely wet (99% for the whole period) and very wet (95%) day precipitation, etc.) are calculated and analyzed. In addition, changes of the location (mean) and 20-year return value (occurrence frequency) of daily precipitation and maximum and minimum temperatures using generalized extreme value (GEV) analysis are analysed to examine climate changes in extremes as well as mean states.

Keywords: climate index, extreme events, generalized extreme value, climate change