



## Spatiotemporal trends in flood hazards using MODIS time-series images in the Pearl River Basin (China)

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The Pearl River Basin (PRB), as one of the most prosperous and densely populated areas in China, is a flood-prone area in which huge casualties and big economic losses constantly happen. Therefore, it is of great importance for the study on the characteristics of flood hazards and spatiotemporal trends in the PRB. Based on Google Earth Engine, this study combined 913-phase Modis 8-Day composite (MOD09Q1.006) images with 30-meters SRTM DEM to monitor flood dynamics in the PRB from 2000 to 2019 using an integrated threshold method. The approach synthesized several key factors, including spectrum characters of water body, cloud and the slope (slope < 1°) information derived from SRTM DEM. Moreover, Sentinel-1 images were used to validate the accuracy of flood inundation maps. The results indicated that, from 2000 to 2019, the flood inundation area in PRB expanded significantly, especially in the Pearl River Delta region. With the development of urbanization, the expansion of impervious surfaces would probably increase the probability of flood hazard.

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