Tuesday, October 9
Poster Session 2
10:30–12:30

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GF-2 OBSERVATIONS OF URBAN BLACK-AND-ODOROUS WATER BODIES IN BEIJING CITY, CHINA

The situation of urban black-and-odorous water (BOW) in China and developing countries is serious. Remote sensing can monitor the 'black' not monitor the 'odour' of BOW, thus, mainly via the color. There have been very few researches allowing high-resolution images to be used for studying urban BOW water quality. A novel approach was used with data from the GF-2 satellite images to identify the BOW from non-BOW in Beijing city, China. The latest data from the government (http://www.hcstzz.com/) indicate that the total length of BOW in the river in Beijing is about 280 km, the number of river sections is 61. We conducted field experiments in Beijing on two occasions, namely, August 28-29, 2016, September 20, 2017. We collected 53 BOW samples and 5 ordinary water samples. Through the analysis of the remote sensing reflectance of the BOW and ordinary water, we found that the reflectance spectra of BOW in green - red band is gentler than the ordinary water. The approach involves first deriving a black-and-odorous water index (BOI) based on the fused 1 m GF-2 reflectance data at blue (514nm), green (546nm), red (656nm) bands and then determining the BOI threshold value (0.05) to separate the BOW and non-BOW. The fifteen 1m GF-2 images covered the whole built-up area in Beijing, about 2500 km^2. The BOW distributed mainly the Southeast of Beijing. In addition to the open list of BOW, there are still many BOW. The BOI needs further verification in other cities.

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