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Land Surface High Temperature Monitoring in Belt and Road Communities

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Heatwaves are extended periods of extremely hot weather and high temperature that have a major impact on human health, socioeconomics and natural systems. As predicted by climate models, ongoing global warming will potentially increase the incidence, intensity and duration of summertime heatwave events. Nevertheless, heat-related health impacts are largely preventable if populations, health and social care systems and public infrastructure are prepared. Therefore, this is plausible if heatwave events are studied for which heatwave real-time monitoring and assessment are central components. It is well recognized that land surface temperature retrieved by satellite sensors is an important variable associated with heatwaves and surface warming research. Land surface temperature retrieved by satellite sensors can be observed spatially and temporally, adequate for applications needing real-time and continuous measurements in quick response. In this study, Chinese Fengyun satellite data were used to monitor the land surface thermal environment during the heatwave event in Belt and Road communities. Split-window algorithm were applied to retrieve land surface temperature from thermal sensor. Spatial temporal distributions of Land surface high temperature are monitored in West Europe, India, and Australia as examples during their high temperature weather. The result shows that monitoring the real-time heatwave hazards in quick responds help provided information to the decision makers and get insight into the thermal environment characteristics over urban areas.