



## **Typhoon storm surges observed by Chinese HY-2a satellite radar altimetry**

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Storm surge induced by an tropical cyclone (or typhoon/hurricane) is often the greatest threat to life and property of coastal areas. HY-2A is the first Chinese ocean dynamic environment monitoring satellite, which was launched in August 2011. The satellite repeats its ground track every 14 days. It plays an important role in global monitoring of sea surface winds (especially extreme winds like typhoons and hurricanes), ocean waves, currents, eddies, and extreme events like storm surges by using its four major payloads, i.e. radar altimetry, microwave scatterometer, scanning microwave radiometer and calibration microwave radiometer. The HY-2A data are obtained from China's National Satellite Ocean Application Service (NSOAS). We use 1 s along-track data with a nominal spatial resolution of about 7 km. The altimetry data are corrected for wet tropospheric (based on the onboard calibration microwave radiometer) and ionospheric path delays, and for ocean, solid earth and pole tides. Several typhoon storm surges were observed by HY-2A satellite altimetry. The storm surge magnitude and the cross-shelf e-folding decay scale are given. The present study shows that the HY-2A satellite altimetry is a useful tool for monitoring typhoon storm surges.