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Advances in using satellite altimetry to observe storm surge

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Storm surges are the major cause for coastal flooding, resulting in catastrophic damage to properties and loss of life in coastal communities. Thus it is important to utilize new technology to enhance our capabilities of observing storm surges and ultimately to improve our capacity for forecasting storm surges and mitigating damage and loss. In this talk we first review traditional methods of monitoring storm surges. We then provide examples of storm surges observed by nadir satellite altimetry, during Hurricane Sandy and Igor, as well as typhoon and cyclone events. We further evaluate satellite results against tide-gauge data and explain storm surge features. Finally, we discuss the potential of a wide-swath altimetry mission, the Surface Water and Ocean Topography (SWOT), for observing storm surges.