

Studying Cyclone Nargis using multi-sensor satellite and multi-platform in-situ observations

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Cyclone Nargis emerged in the Bay of Bengal in late April 2008 and made landfall in Myanmar on May 2. The strong sustained wind, intense storm surge, and torrential rain associated with the cyclone caused huge loss of life and substantial destruction. Understanding the oceanic and atmospheric processes that govern the genesis, intensification, and the path of such tropical storms can help improve forecast systems for the protection of life and property. The in-situ measurements from the developing Indian-Ocean Observing System (IndOOS) and satellite observations, the backbone of IndOOS, have provided complementary observations to help address these issues. In this study, we use satellite observations of SST, sea level, and wind in conjunction with measurements by buoys and Argo floats to describe the evolution of Nargis, the upper-ocean response, and the associated air-sea interaction. Wind measurements from two RAMA buoys (at 90E, 12N and 15N) are also used to evaluate QuikSCAT and model-based reanalysis wind products such as NOGAP and NCEP. Sea level variations simulated by an eddy-resolving OGCM using different wind forcings are assessed using JASON-1 data.