Introduction: Cyclone Gonu (June 2007) formed in the south central Arabian Sea and tracked west-northwestward into the Straights of Hormuz, reaching a peak intensity of 145 knots and mean sea level pressure of 914mb before making a landfall in Iran. Tropical Cyclone like Gonu was an unusual one in the northern Indian Ocean basin and was the strongest on record. Most of the cyclones form in the region over the Bay of Bengal, east of India; those that take shape over the Arabian Sea, west of the Indian peninsula, tend to be small and fizzle out before coming ashore. Cyclone Gonu was a rare exception and caused a vast devastation in Oman and Iran. It has been analyzed with GPS and other satellite data sets.

Tool: Weather Research and Forecasting Model, Version 2.2
Resolution: Outer Most Domain 45 km and 221*221 grid points
Inner domain 15 km and 292*292 grid points
Time Integration: 96 hours    GPS RO Assimilated points: 56 (Outermost Domain)

Data Sets for Analysis: FORMOSAT-3/COSMIC, SSM/I, Quikscat, GTS soundings, bogus vortex and NCEP-NCAR analysis.

Results: All the assimilations had a tendency of initial adjustment till 24-h integration. The control run (without assimilation) and QuikSCAT assimilation runs were close to the best track from 24 to 72 h, later both the tracks had an eastward tendency, whereas the assimilation of GPS (FORMOSAT-3) RO data showed that the track is close to the observed track from 24 to 60 h, then a westward tendency of deviation from the best track for few hours. Rest of the assimilations like SSM/I, GTS, bogus vortex and combination of these data were comparable from 24 to 60 h and then a westward tendency from the best track. All the assimilation runs have better agreement with the observations in day 2 and day 3 compared to day 4, but only COSMIC RO data produces the track closest to the observation at day 4.