SIMULATING THE SPECIAL FEATURES OF CYCLONE AILA (2009) AFTER LANDFALL

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The objective of the study is to simulate the special features of the pre-monsoon Bay of Bengal cyclone Aila (23-26May 2009) after landfall. Weather Research & Forecasting (WRF) model with 3 nested domains (60km, 20km and 6.6km) and two-way interaction, is used. The initial and boundary conditions are supplied from FNL dataset with RTG-SST. The single combination of physical parameterization schemes i.e. BMJ as cumulus, WSM as microphysics,YSU as Planetary Boundary Layer (WSM-YSU-BMJ) is considered. The special feature of Aila is its northward movement throughout its life period and its rapid intensification just after the landfall. It maintained its cyclone intensity upto 15 hours after landfall. The results from the model are examined at every 6hr interval and 1hr interval.

Northward movement throughout its life period and the intensification after the landfall are very well captured in the numerical experiment. The model predicted landfall is 3-4 hrs late than the observed landfall and the landfall error is found to be 83 km. Model simulated cyclone maintained its intensity for 12hrs after model landfall. The detail features could be understood clearly when the computed results are examined at every 1hr interval. Thus the observed special features of the cyclone Aila are well captured by the WRF model though the intensity is over predicted. The vertical structure of Aila is also compared with the observed vertical structure before and after the landfall. The role of Four Dimensional Data Assimilation (FDDA-nudging) is also discussed in detail.