J Earth Sci Clim Change 2019, Volume 10
DOI: 10.4172/2157-7617-C2-060

Dynamical approach to identify the track evolution of cyclones over Bay of Bengal

Indrani Ganguly, Jayanti Pal and Sutapa Chaudhuri
University of Calcutta, India

An investigation has been carried out in this research to identify the track evolution process of tropical cyclones occurred over Bay of Bengal (BOB) through dynamic point of view. Three cyclonic systems of the same category occurred over Bay of Bengal has been considered for this study. The cyclonic systems, Kayant, Nada and Maarutha are those systems that have attained their maximum strength and categorize as Cyclonic System (CS). The Kayant has unique track features that develop over BOB and move east-northeast ward and subsequently turned westward and dissipated over the ocean. Kayant thus, had no land fall. The cyclonic system Nada is another system developed as CS over BOB with westward track. Nada developed over BOB and had landfall at southeast coast of India. The third cyclonic system under investigation is Maarutha, which had an eastward track and made a land fall over Myanmar. It is observed that the cloud cluster initially developed under surface westerly current for Maarutha. The analysis depicts that the cloud clusters have been developing under different surface currents. A tilt in vertical profile of vorticity has been observed with the track of Kayant and Nada while for Maarutha, tilt of vorticity was not with the track of cyclone. The divergence field in upper level has been found for the systems Nada and Maarutha however, while for Kayant, the divergence field in upper level was not observed. The result shows that the evolution of track for each system was quite different however, they were declared to belong in the same category. The surface current at initial stage, vertical profile of vorticity and upper level divergence might aid in providing an insight about the structure of the track of cyclones over BOB.

indraniganguly1520@gmail.com