



Extreme La-Nina 2010/11 and the vigorous flood at the north-east of Australia.

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Abstracts.

The synoptical mechanism of construction of the atmospheric circulation anomalies over Pacific and partially Indian Oceans, took place during a culmination of La-Nina 2010/11 event, was considered using NCEP/NCAR reanalysis dailies.

It was revealed, that the most destroying flood in the modern Australian history involved due an unusual activity of the tropical cyclogenesis at the summer Australian monsoon system. From 7 to 9 tropical cyclones obtained during the several days over the considering region simultaneously. Half of them reached the hurricane intensity and extended to 10 – 12 km layer. The high activity of tropical cyclogenesis occurred not only at the southern (“Australian”) Intra-Tropical Convergence Zone (ITCZ) branch, but also at the northern (“south-Asian”) ITCZ branch.

Moreover, tropical cyclones have “attacked” the Australian monsoon regions by turn as from Indian with a system of equatorial zone of westerly winds, so that from Pacific with a system of easterly trade winds and followed rich precipitations.

The Pacific trade wind was extremely developed during the whole of Australian monsoonal period and occupied almost all tropical Pacific. The South-Pacific anticyclone was persistently shifted from Chile and Peru coast to the center of Pacific and was expressed at the streamline maps as a coupled center. The negative SST anomaly occurred during the whole of monsoon season over the major part of tropical Pacific. It was shown, that extreme negative SST anomalies were situated not at the eastern Pacific, as during “canonical” La-Nina case, but significant shifted to the central Pacific, to the date line. This total allows calling the La-Nina 2010/11 as La-Nina “Modoki”.

The main conclusion of this work is the tropical cyclones activity plays a leading role in the generation of large-scale anomalies of weather and climate at the low latitudes, and mainly of El-Nino – Southern Oscillation.