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Forecast of the Onset Date of Southwest Monsoon - 2022 over Kerala

1. Background

Advance of the southwest monsoon over Indian main land is marked by monsoon onset over Kerala and is an important indicator characterizing the transition from hot and dry season to a rainy season. As the monsoon progresses northward, relief from scorching summer temperatures is experienced over the areas. Southwest monsoon normally sets in over Kerala on 1st June with a standard deviation of about 7 days. India Meteorological Department (IMD) has been issuing operational forecasts for the date of monsoon onset over Kerala from 2005 onwards. An indigenously developed state of the art statistical model with a model error of ± 4 days is used for the purpose. The 6 Predictors used in the models are; i) Minimum Temperatures over North-west India, ii) Pre-monsoon rainfall peak over south Peninsula, iii) Outgoing Long wave Radiation (OLR) over south China Sea, (iv) Lower tropospheric zonal wind over southeast Indian Ocean, (v) upper tropospheric zonal wind over the east equatorial Indian Ocean, and (vi) Outgoing Long wave Radiation (OLR) over the south-west Pacific region.

IMD's operational forecasts of the date of monsoon onset over Kerala during the past 17 years (2005-2021) were proved to be correct except in 2015. Forecast verification for the recent 5 years (2017-2021) is given in the table below.

Year	Actual Onset Date	Forecast Onset Date
2017	30 th May	30 th May
2018	29 th May	29 th May
2019	8 th June	6 th June
2020	1 st June	5 th June
2021	3 rd June	31 st May

2. Forecast for the 2022 Southwest Monsoon Onset over Kerala

This year, the onset of southwest monsoon over Kerala is likely to be earlier than normal date of onset. The monsoon onset over Kerala is likely to be on 27th May with a model error of ± 4 days.

3. Status of the 2022 Southwest Monsoon and Advance over the Andaman Sea

In the Indian monsoon region, initial monsoon rains are experienced over south Andaman Sea and the monsoon winds then advance north-westwards across the Bay of Bengal. As per the normal dates of monsoon onset/progress, the southwest monsoon advances over the Andaman Sea around 22nd May. In association with enhanced cross equatorial winds, conditions are becoming favorable for advance of Southwest Monsoon into South Andaman Sea, Nicobar Islands and some parts of southeast Bay of Bengal, around 15th May, 2022. Past data suggest that there is no association of the date of monsoon advance over the Andaman Sea either with the date of monsoon onset over Kerala or with the seasonal monsoon rainfall over the country.