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INDIA METEOROLOGICAL DEPARTMENT

**Forecast of the Onset Date of Southwest Monsoon - 2025 over Kerala**

**1. Background**

The advance of the southwest monsoon over the Indian mainland is marked by monsoon onset over Kerala and is an important indicator characterizing the transition from the hot and dry season to the 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 1<sup>st</sup> 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  $\pm 4$  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) Mean sea level pressure over Subtropical NW Pacific Ocean, iv) Outgoing Long wave Radiation (OLR) over south China Sea, v) Lower tropospheric zonal wind over Northeast Indian Ocean, vi) Upper tropospheric zonal wind over Indonesia Region.

IMD's operational forecasts of the date of monsoon onset over Kerala during the past 20 years (2005-2024) were proved to be correct except in 2015. Forecast verification for the recent 5 years (2020-2024) is given in the table below.

Year	Actual Onset Date	Forecast Onset Date
2020	1 <sup>st</sup> June	5 <sup>th</sup> June
2021	3 <sup>rd</sup> June	31 <sup>st</sup> May
2022	29 <sup>th</sup> May	27 <sup>th</sup> May
2023	8 <sup>th</sup> June	4 <sup>th</sup> June
2024	30 <sup>th</sup> May	31 <sup>st</sup> May

**2. Forecast for the 2025 Monsoon Onset over Kerala**

This year, the southwest monsoon is likely to set over Kerala to be on 27<sup>th</sup> May with a model error of  $\pm 4$  days.