

PRESS RELEASE (16.11.2019)

New Product: High-resolution Air Quality Early Warning System for Delhi

Ministry of Earth Sciences has developed first of its kind a high-resolution Air Quality Early Warning System for Delhi, which is designed to predict extreme air pollution events in Delhi and give warnings to take necessary steps as per Graded Response Action Plan (GRAP). Internationally, IITM has taken a lead to provide a very high-resolution (400 meters) operational air quality forecast using both satellite (3km resolution) and surface (at city scale with 43 monitoring stations of CPCB, DPCC and SAFAR-IITM) chemical data assimilation integrated with dynamical downscaling.

The system is designed by IITM, Pune in collaboration with NCAR, USA and support from IMD, NCMRWF, CPCB, MoEF. It uses the latest emission inventory developed by SAFAR-IITM.

The warning system consists of: (i) near real-time observations of air quality and visibility over Delhi region and details about natural aerosols like dust (from dust storms), fire information, satellite aerosol optical depth (AOD) and PBL height, (ii) Predictions of air pollutants based on state-of-the-art atmospheric chemistry transport models, (iii) Warning Messages and Alerts and Bulletins, (iv) forecast of the contribution of non-local fire emissions to the air quality in Delhi. The warning system also provides an air quality forecast for a few more cities (including Lucknow, Varanasi and Kolkata, etc) in the northern region of India at 10km resolution.

The website also shows forecast verification for Delhi on a daily basis. Dedicated website launched for Public for air quality forecast: <https://ews.tropmet.res.in/>

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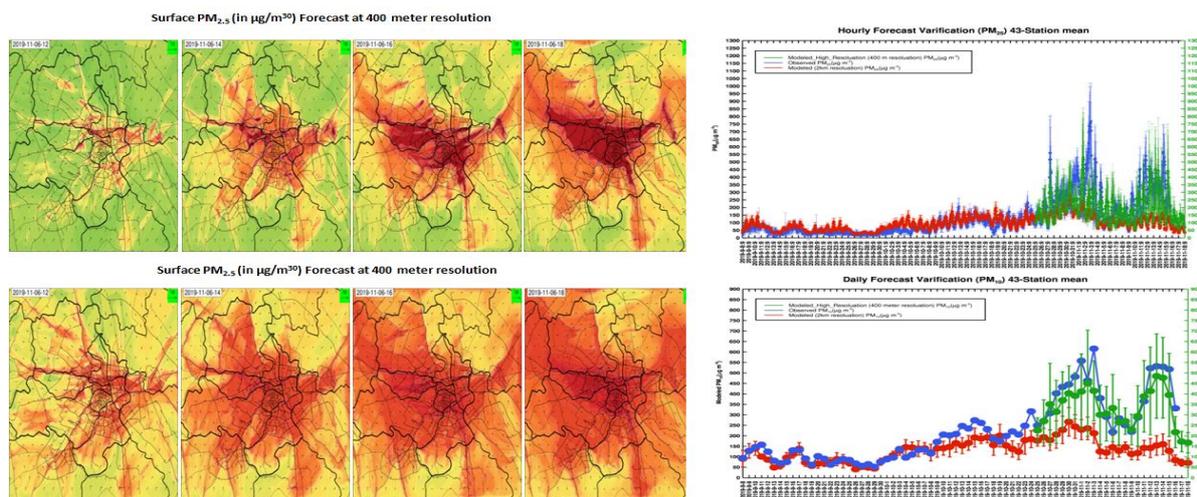


Figure: PM_{2.5} (top left) and PM₁₀ (bottom left) Forecast generated by high-resolution model PM_{2.5} (top right) and PM₁₀ (bottom left) forecast verification (Blue: observations; Red: 2km forecast; Green: 400 meter forecast)