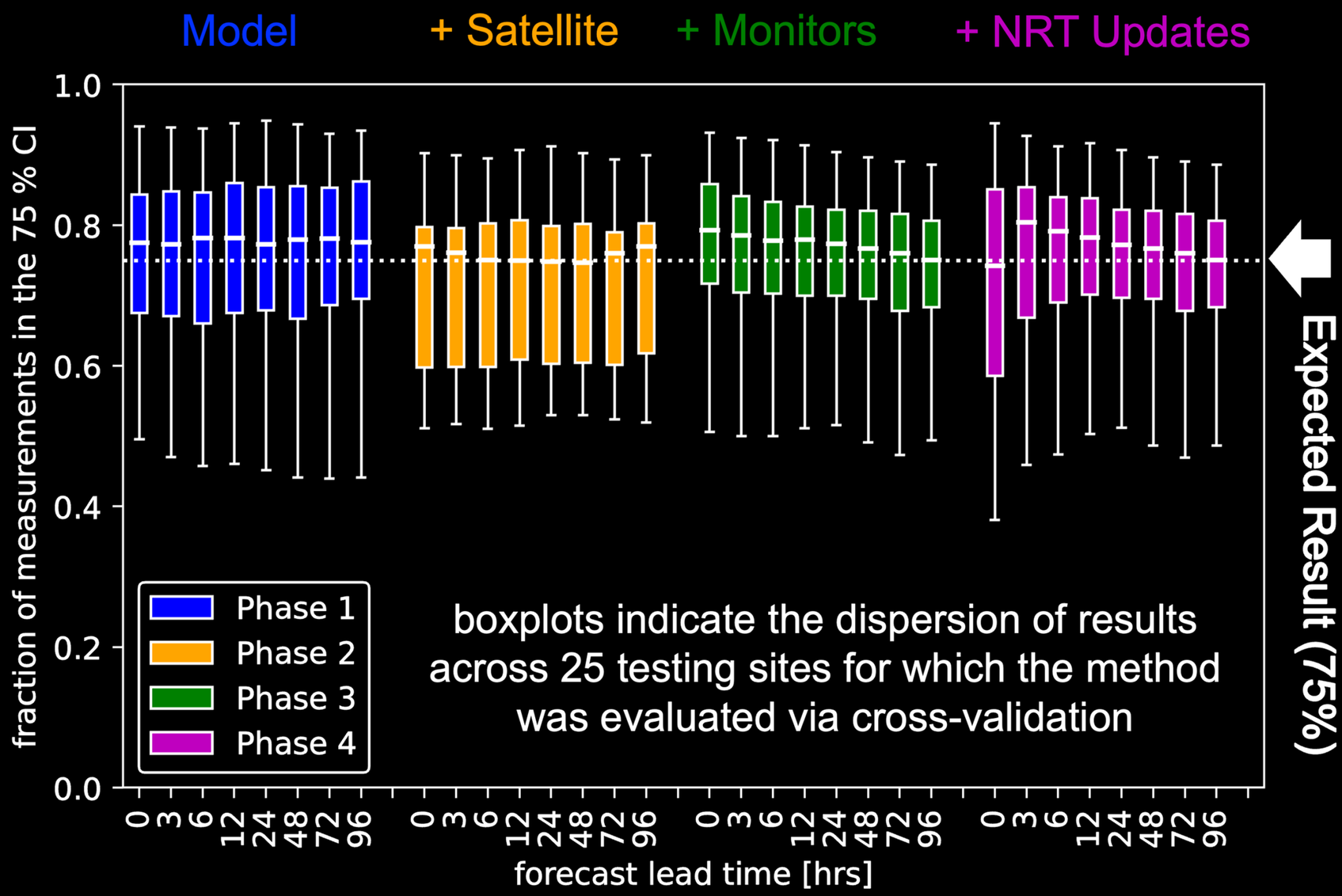
Uncertainty Quantification for Air Quality Forecasting using Multiple Data Sources



GMAO scientists were part of a collaboration which combined multiple data sources to forecast confidence intervals (CI) of the concentration of NO_2, a key urban air pollutant.

In four successive phases, information to improve the forecast is added from (1) the GEOS-CF Model, (2) TROPOMI satellite information, (3) historical data from regional EPA air quality monitors, and (4) near-real-time (NRT) information from nearby EPA monitors.

Across all phases, and out to 96 hours lead time, NO_2 concentrations fell within the forecasted CI about 75% of the time. The results show this methodology's reliability, which could be used to inform public health managers about various air quality risk scenarios.