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Title: MAP-AQ: An International System for Monitoring, Analysis, and Prediction of Air Quality

Air quality science emerged out of the societal need to mitigate health effects of deadly smog events that occurred in North America and Europe around the middle of 20th century. In the past 70 years, atmospheric chemistry has advanced so much that we are now capable of predicting air quality in short-term (1-3 days) and long-term (climate time scales), and assessing the implications of air pollution for public health and food security. Air quality has been improving in North America and Europe owing to continuous emission control measures but is rapidly degrading in the developing countries due to rapid economic growth powered by expansion of industrial, energy, and transportation sectors. About 7 million people die prematurely every year due to poor air quality and 925 of such deaths now occur in the developing countries. To enhance the decision-making activity in the area of air quality, we have recently launched an international activity called the Monitoring, Analysis and Prediction of Air Quality (MAP-AQ) that focuses on developing air quality prediction capabilities in the developing world where the frequency of acute air pollution events has been increasing dramatically. This presentation will briefly discuss the evolution of atmospheric chemistry research, the MAP-AQ initiative, recent developments in improving the short-term air quality forecasts over the United States and India, importance of transboundary transport of air pollutants in India, and projections of future air quality in South Asia.