TIGER TEAMS AND APPLICATIONS TO SOCIETY

HAQAST

Brad Pierce and Daniel Tong – Improved National Emissions Inventory NOx emissions using OMI Tropospheric NO_2 retrievals and Potential Impacts on Air Quality Strategy Development

THE LEADERS

Brad Pierce and Daniel Tong lead the Tiger Team working on the project, *Improved National Emissions Inventory NOx emissions using OMI Tropospheric NO_2 Retrievals and Potential Impacts on Air Quality Strategy Development*. Brad Pierce, a research scientist at NOAA, is an expert in the design, development, execution of global atmospheric models, and satellite data assimilation. Daniel Tong is a professor at the Center for Spatial Science and Systems at George Mason University. Together, they lead this Tiger Team with the goal of supporting the National Weather Service, EPA, CDC, and Lake Michigan Air Directors Consortium (LADCO).

THE TIMELINE

The short timeline is a common challenge among Tiger Teams. Brad Pierce and Daniel Tong agree that effective communication is key to address the timeline. Brad Pierce says, "a shortened timeline means that we need to precede with experiments that have known issues that have not been resolved". While initially seen as a issue, it can lead to "results that you did not anticipate". The shortened timeline also encourages collaboration among the team members and partner organizations. Daniel Tong emphasizes that "we can collectively figure out the project".

PARTNER CONTRIBUTIONS

This Tiger Team project includes numerous partners that contribute to the project tasks. The EPA provides information on tests they completed for the CDC, the National Weather Service provides an operational forecast model, and LADCO helps to ensure that experiments are aligned with their State Implementation Plan (SIP) modeling. All feedback and aid are necessary because this Tiger Team had to translate their research models into assessment and operational forecasts. Brad Pierce states that one of the biggest challenges was his "lack of familiarity running CMAQ air quality models that air quality managers use to do assessments". Daniel Tong mentions the importance to include partner contribution, since partners are also end-users.

BENEFITS TO END-USERS

This main goal of this Tiger Team project is to improve estimates of National Emissions Inventory (NEI) and area source NOx emissions. However, this project will include direct benefits to end-users and improve the NWS Air Quality Forecasts. It will also help the EPA to ensure that safe ozone standards are met by providing better NOx estimates. The CDC will benefit by using the data to investigate the potential for health effects from exposure to contaminants. The LADCO benefits from the model predictions and data on the unique atmospheric dynamics of the Great Lakes.

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