

Air pollution monitoring in Asia-Pacific: Innovative Solutions with Remote Sensing

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Value of Satellite Data

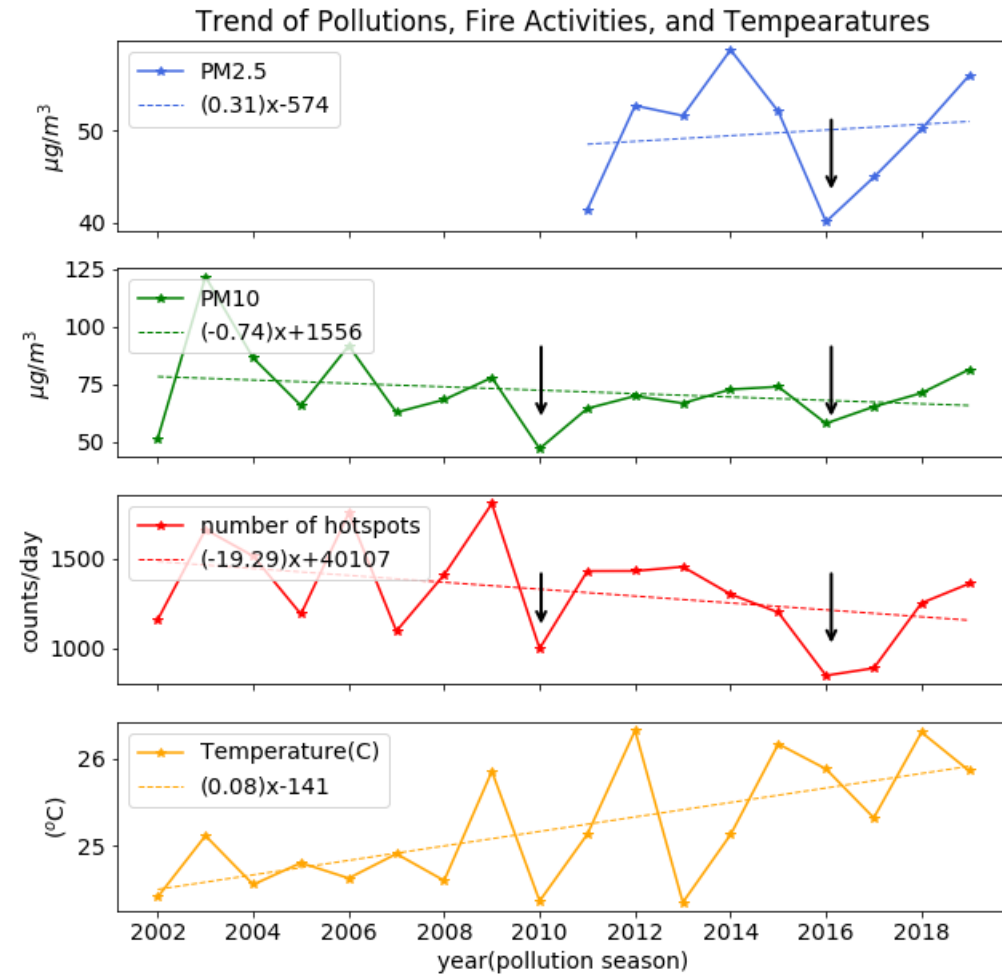
- **Fills Data Gaps:** By utilizing remote sensing platforms, countries which do not have ubiquitous ground-based sensor networks may obtain needed data.
- **Provides context:** Greater fields of view empower analysis of ecosystem health across large geographic areas, thereby enabling holistic analysis
- **Builds regional comparability:** Integrating data from multiple remote sensing platforms can provide greater understanding of the importance of regional and global cooperation.

Strengthening regional cooperation to tackle air pollution challenges in Asia and the Pacific: Chiang Mai

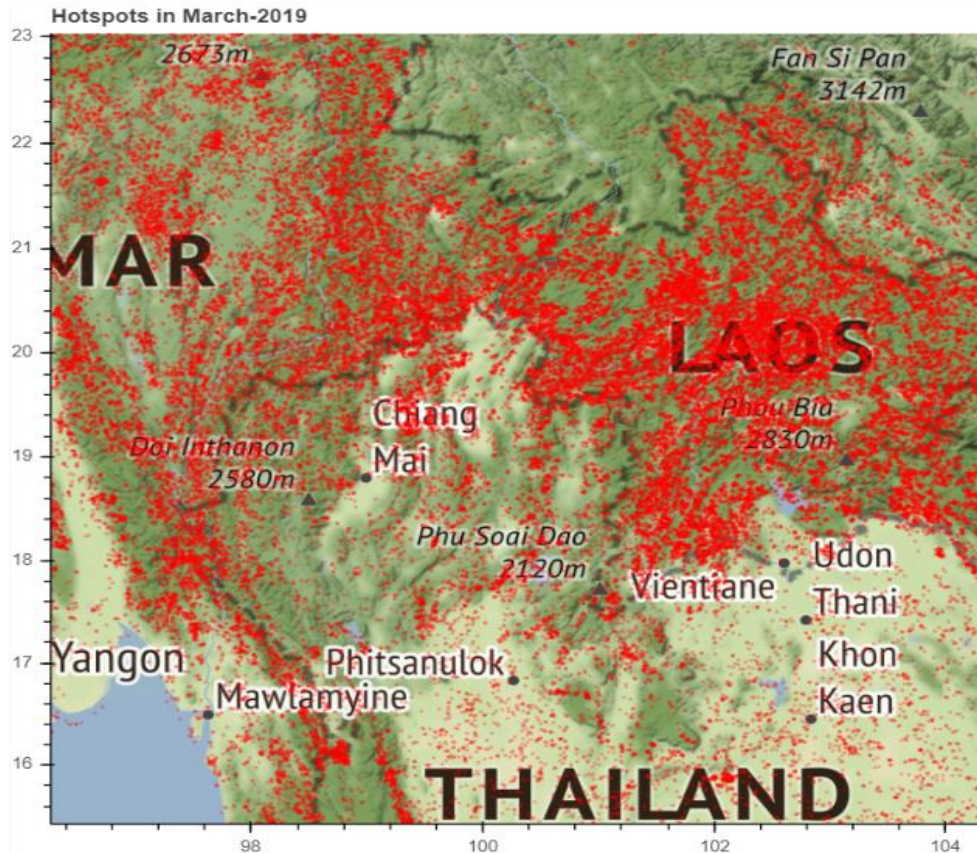
Support implementation of science-based policy action plan at city level to effectively tackle air pollution in Asia and the Pacific

1. Enable policy makers in project cities make planning decisions that effectively tackle air pollution for resilient and sustainable urbanization and economic development
2. Stakeholders in pilot cities develop action plans to effectively improve air quality situations in their cities for resilient and sustainable urbanization

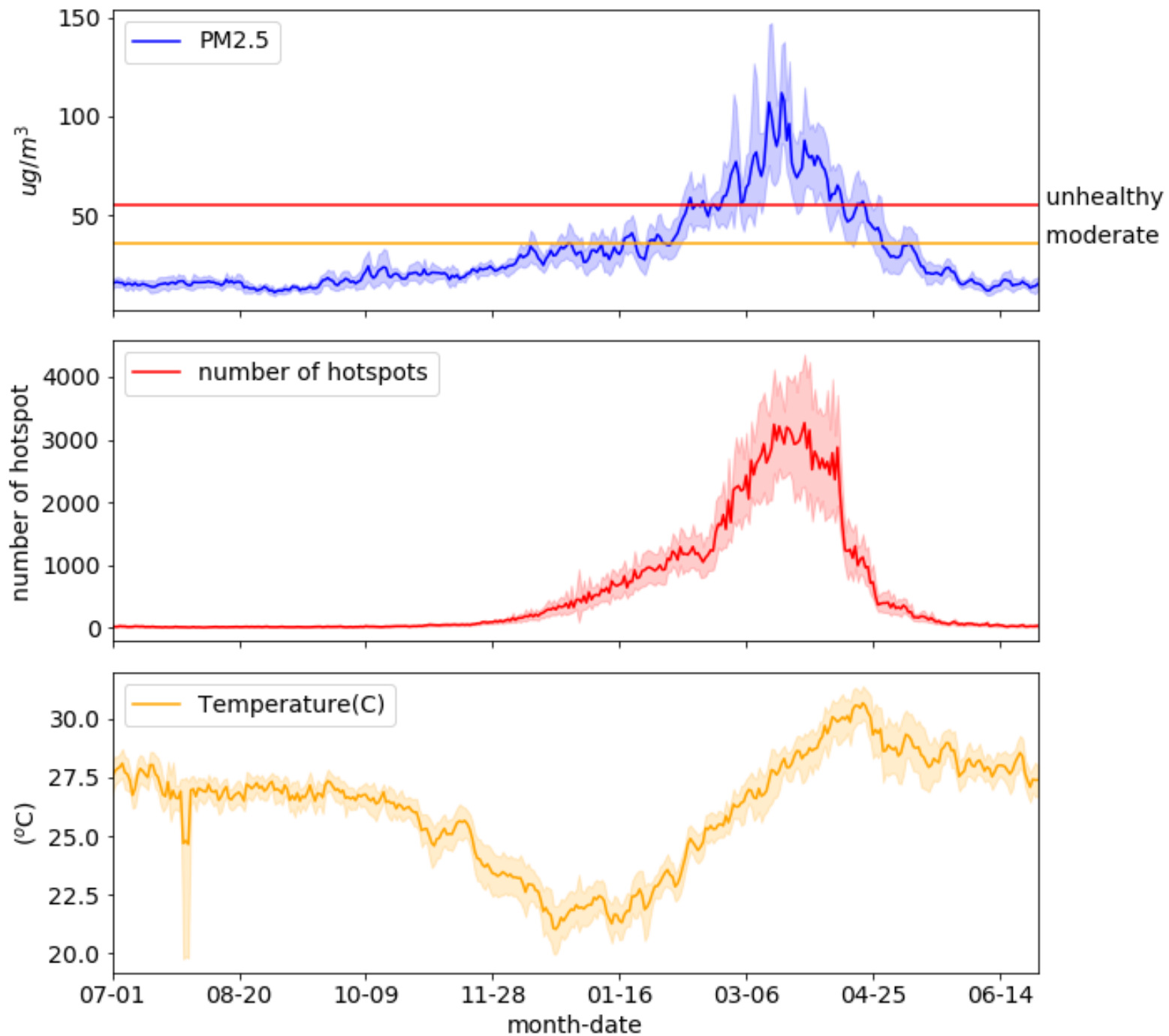
Effective of Climate Change on Air Pollution in Chiang Mai



Hotspots detected through Remote Sensing



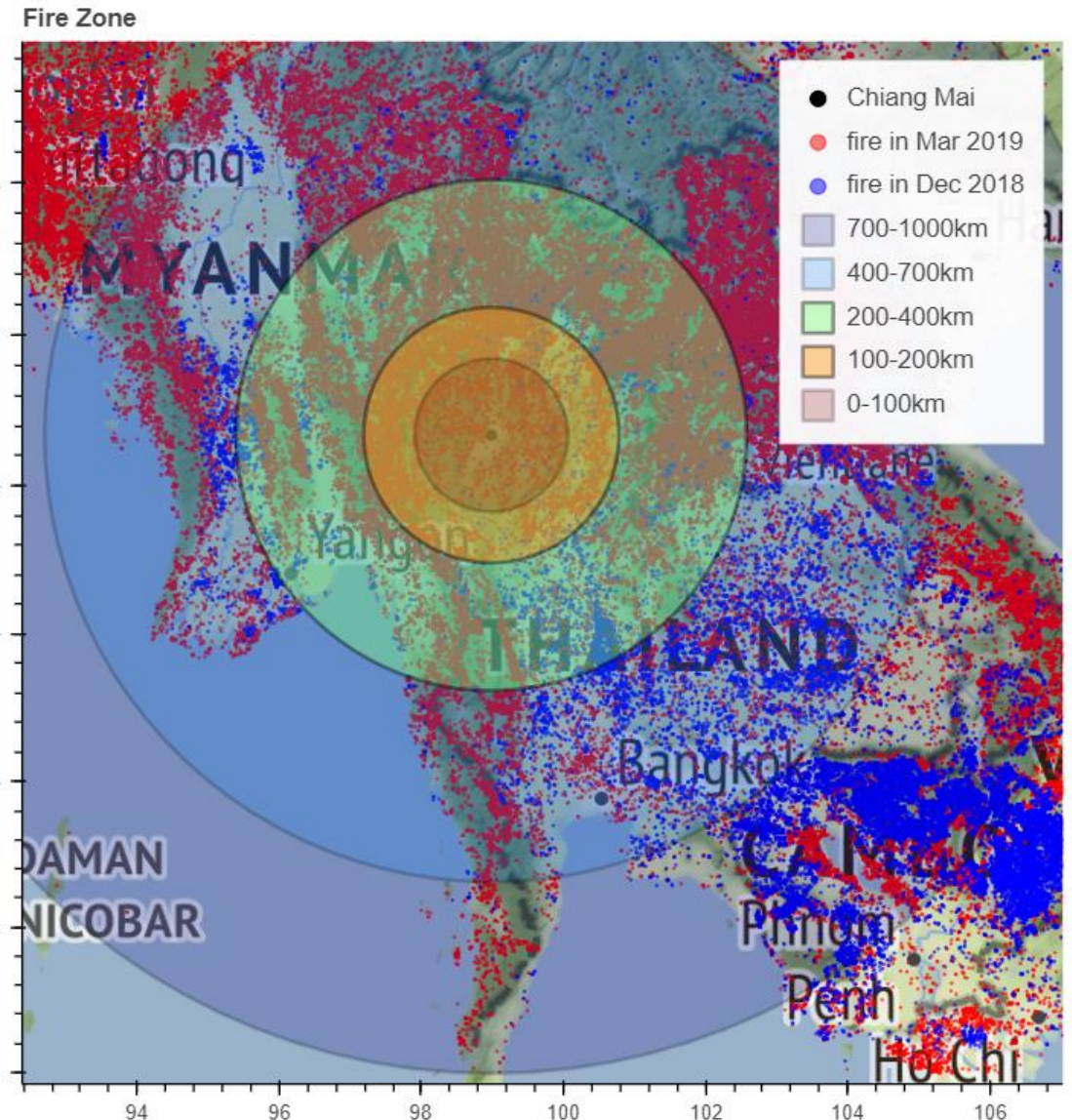
The amount of fire activity is calculated from the Moderate Resolution Imaging Spectroradiometer (MODIS) satellite instrument. Only the hotspots within 1000 km from the coordinates of Chiang Mai (Latitude = 18.7904, Longitude=98.9847) in Mercator coordinates are considered.



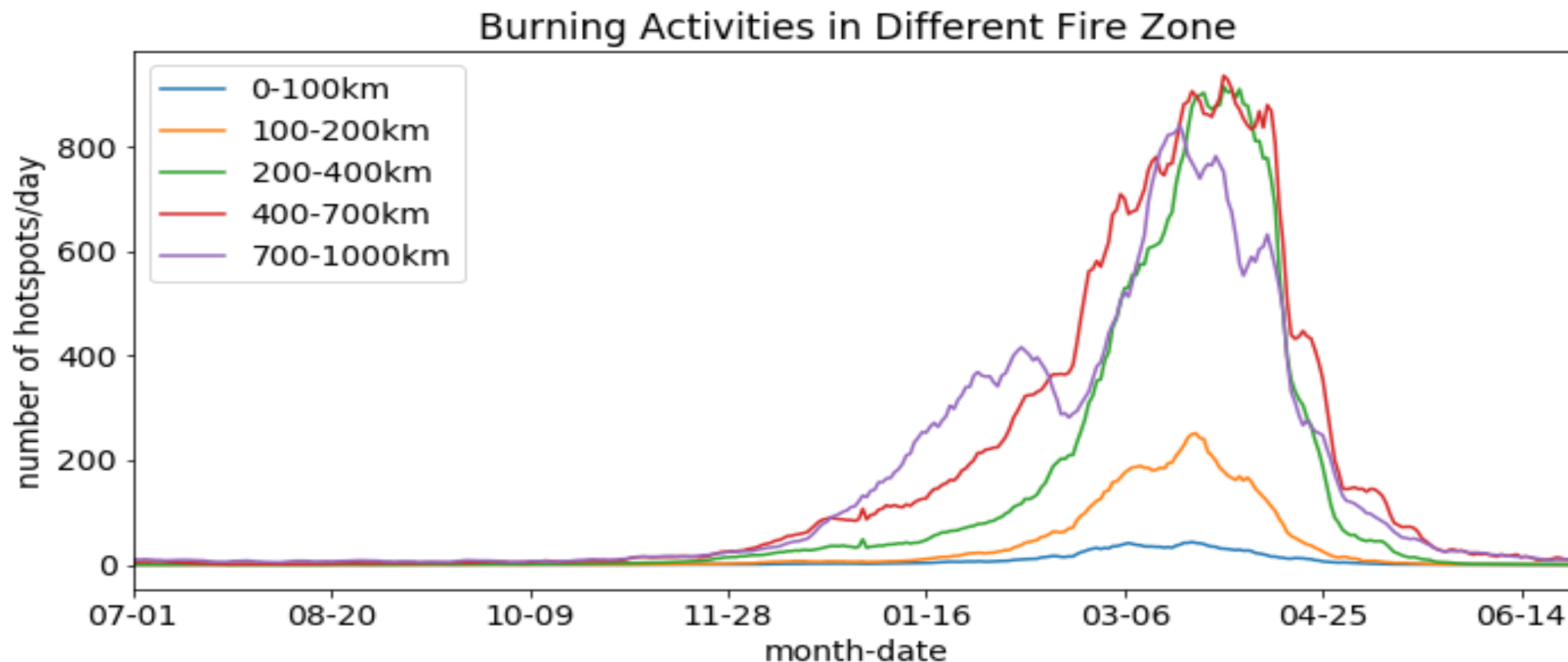
Seasonal Pattern

On average, the PM2.5 level significantly increases in the winter season. The average values reach the moderate AQI (horizontal yellow line) between the 1st of December and the 30th of April, and an unhealthy AQI between the 15th of February and the 15th of April. The number of hotspots in a 1000 km radius from Chiang Mai has the same seasonal pattern as the PM2.5 level. Most burning activities occur in March, where the pollution level peaks.

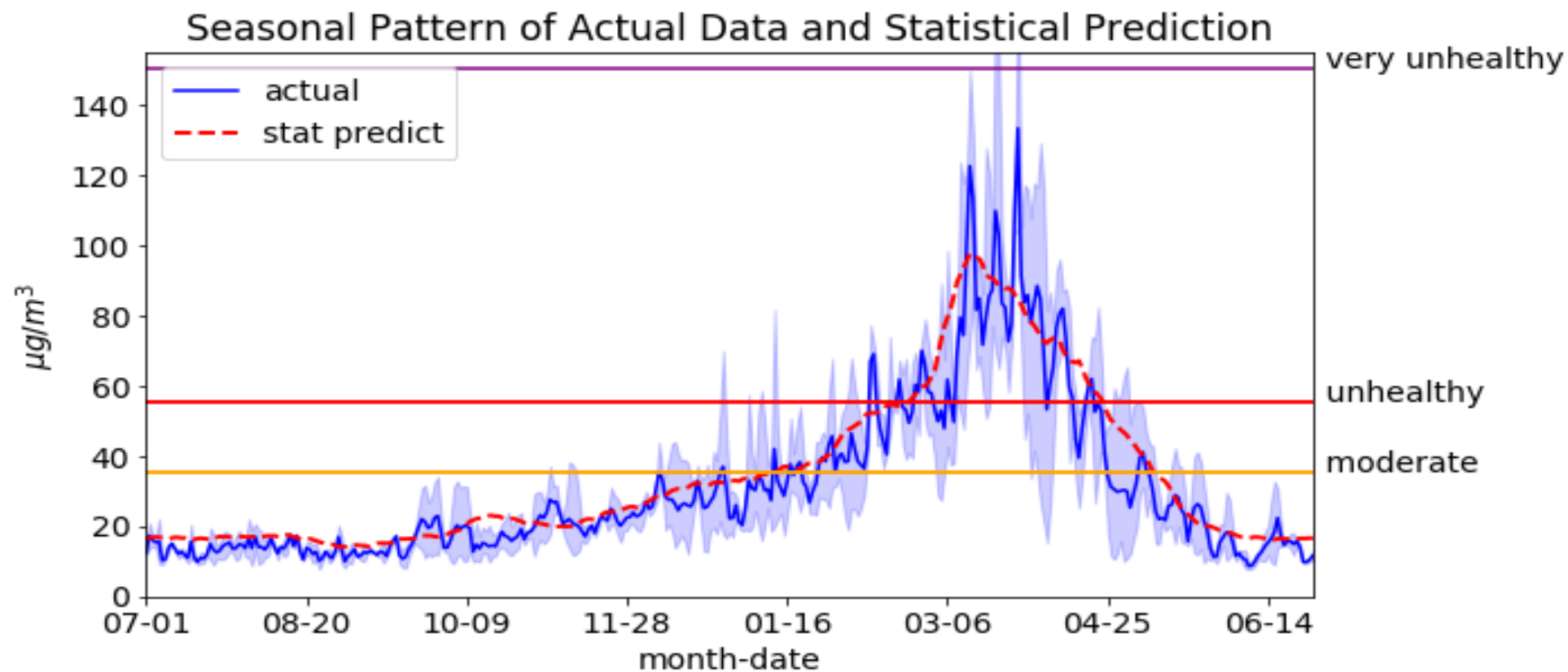
Consideration of Transboundary Effects of Hotspots



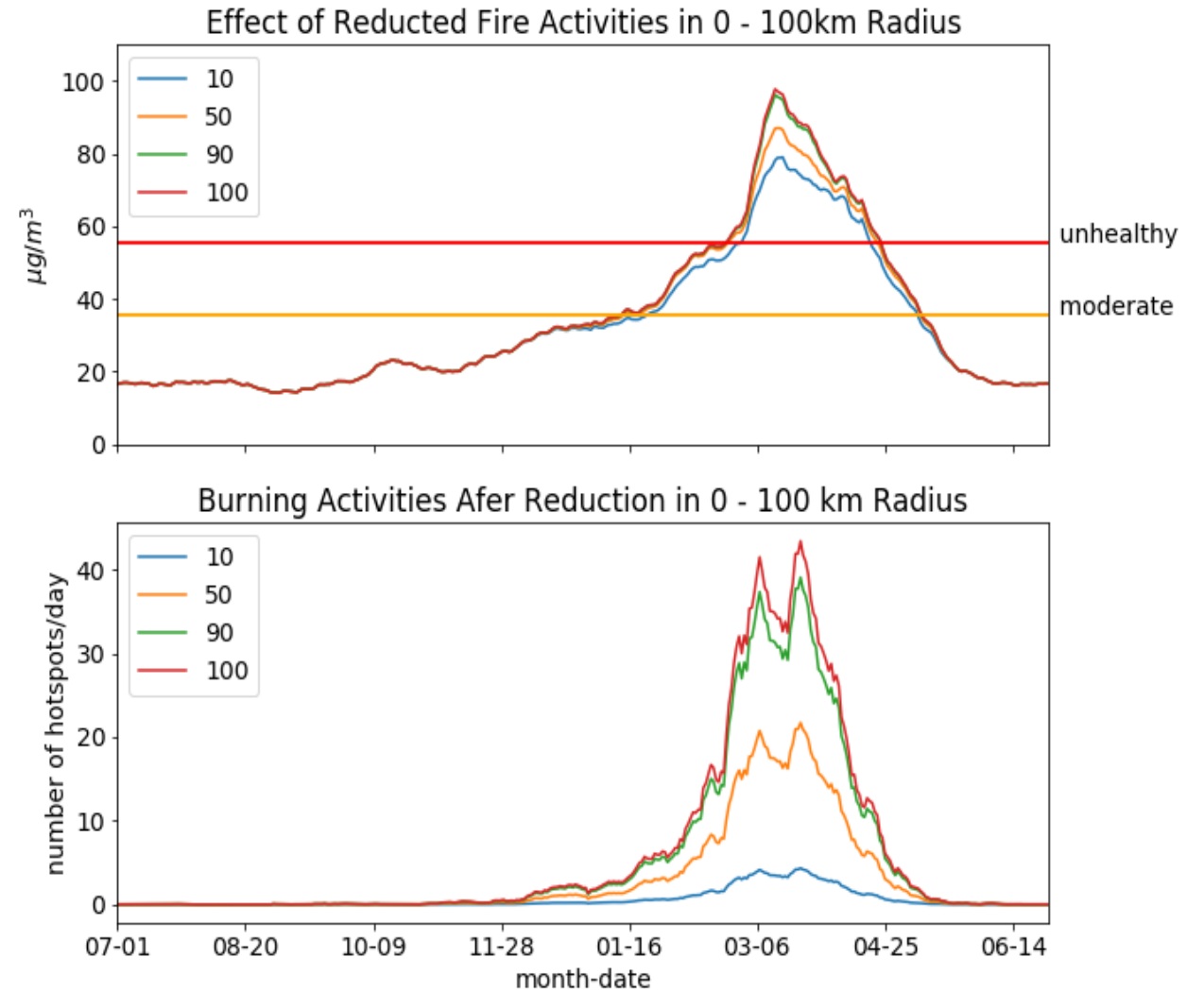
Hotspots by Distance



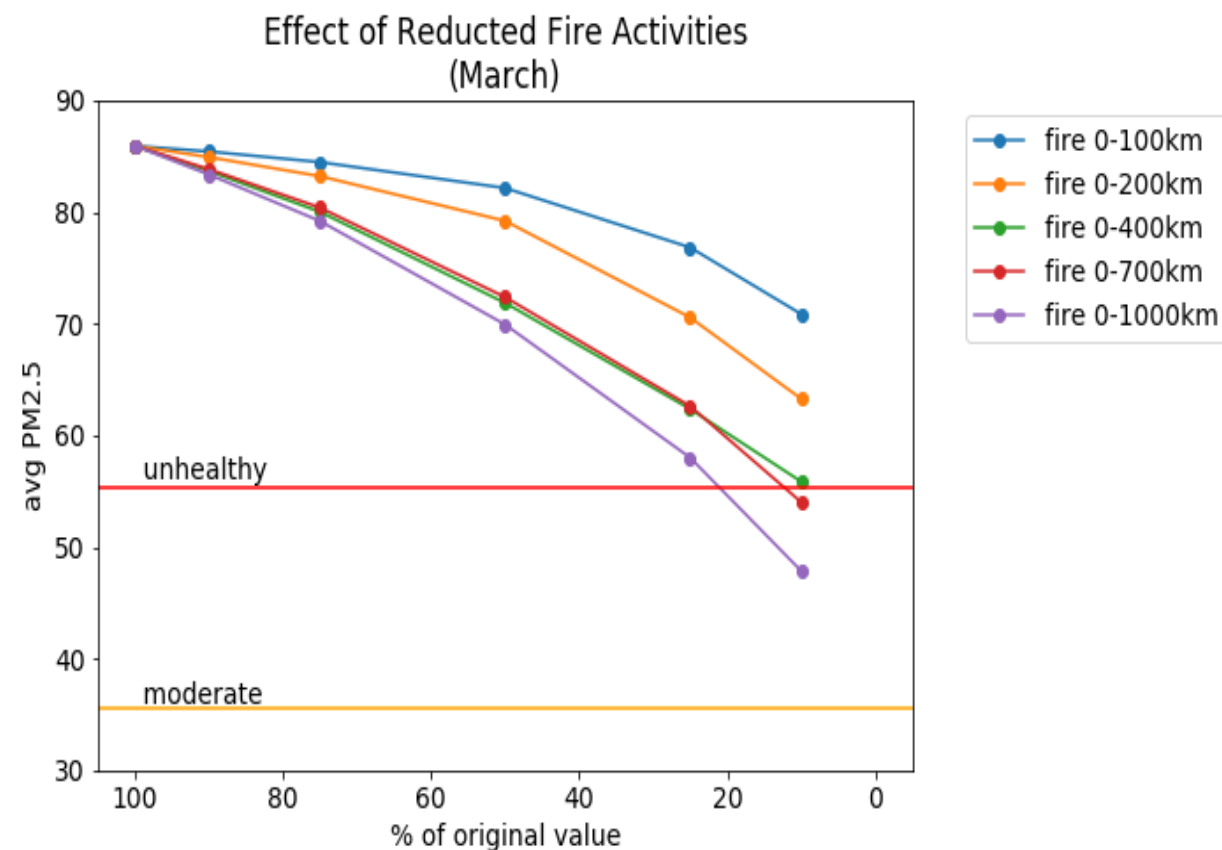
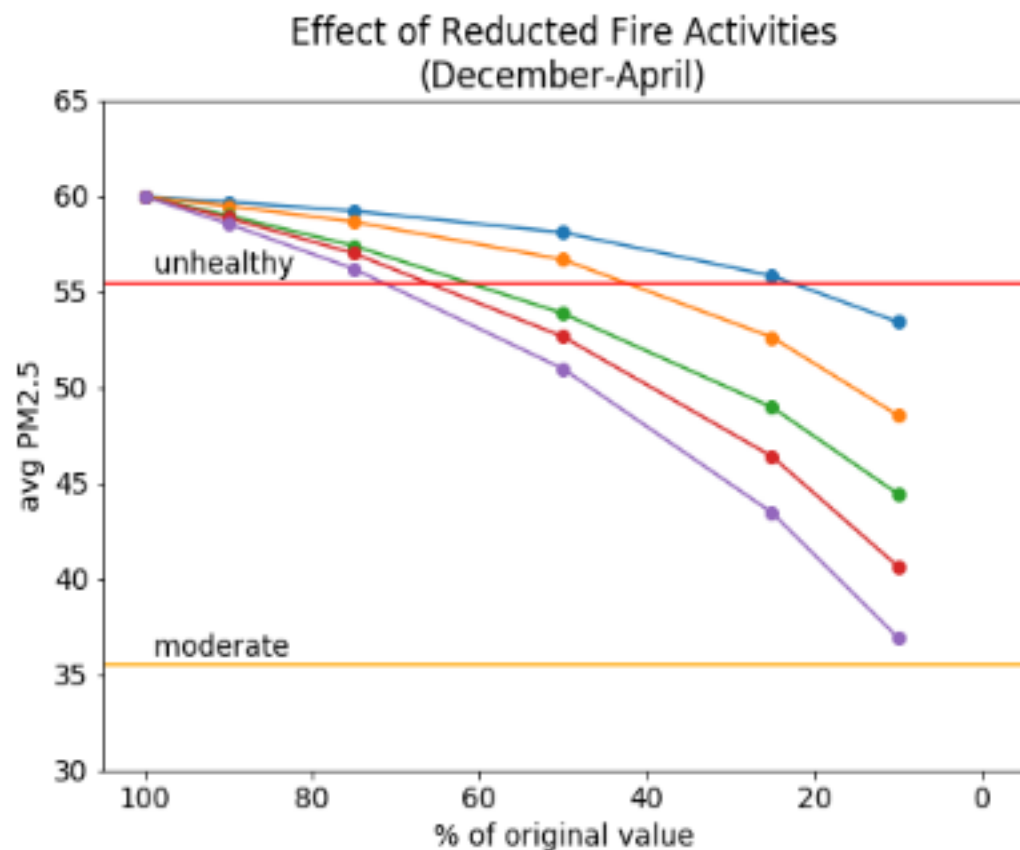
Seasonal Pattern of PM2.5



Air Pollution: A Transboundary Problem

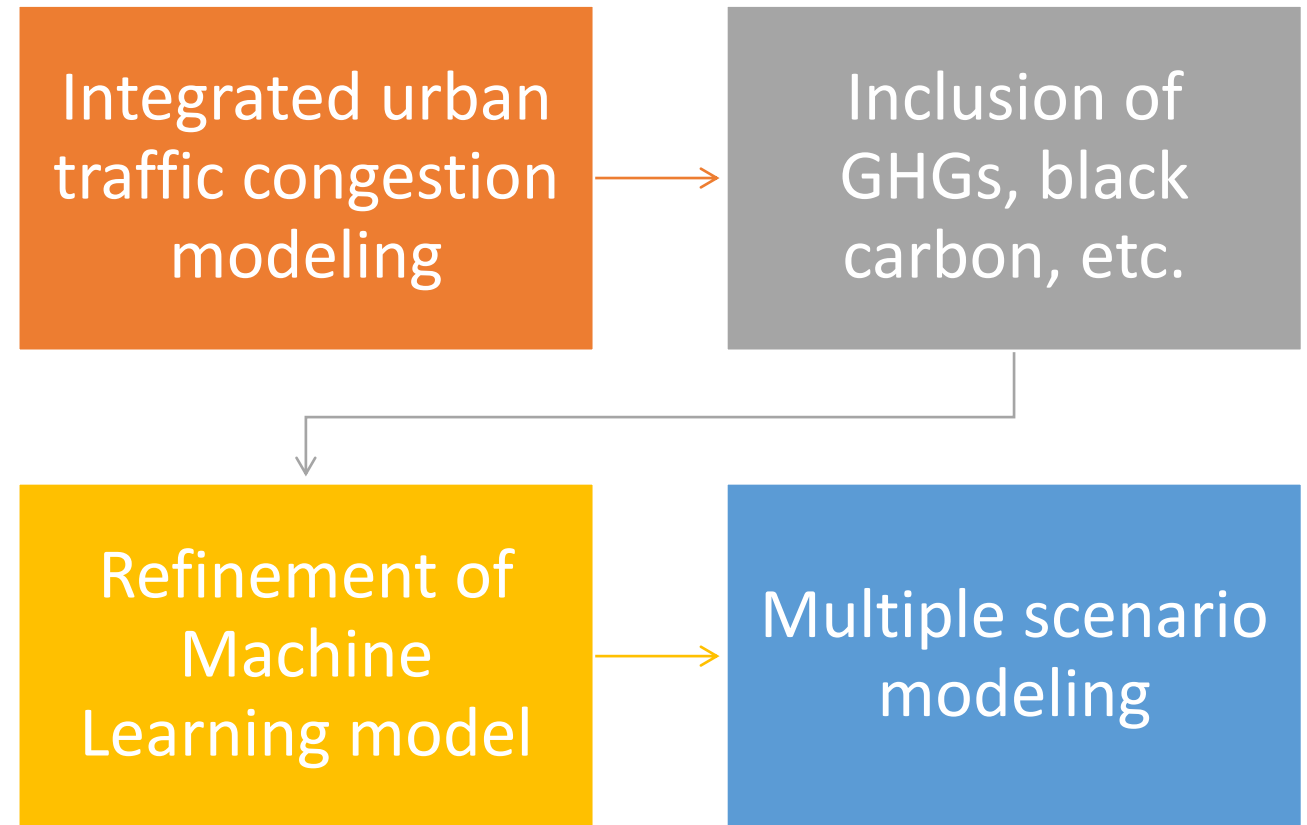


Cooperation to Achieve Clean Air for All





Next Steps for the Project



Summary

11 SUSTAINABLE CITIES AND COMMUNITIES



Remote Sensing Empowers
Science-Driven Policy

Innovative uses of integrated data
sources is needed

International Cooperation is
needed to provide clean air for all

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