



LEVERHULME

Centre for **Wildfires,**
Environment and Society



**National Centre for
Earth Observation**

NATURAL ENVIRONMENT RESEARCH COUNCIL

KING'S
College
LONDON

Air Quality Impacts from Agricultural Burning in South-East Asia

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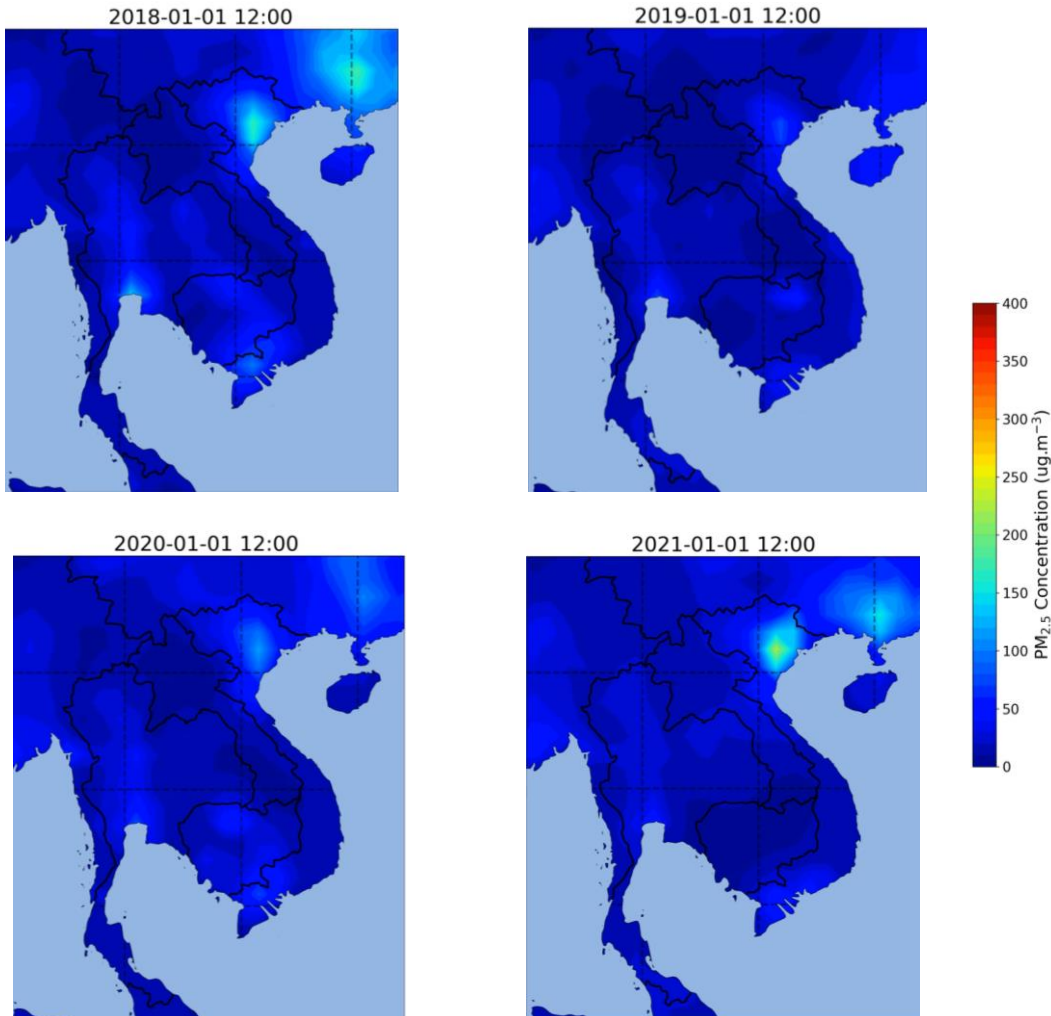
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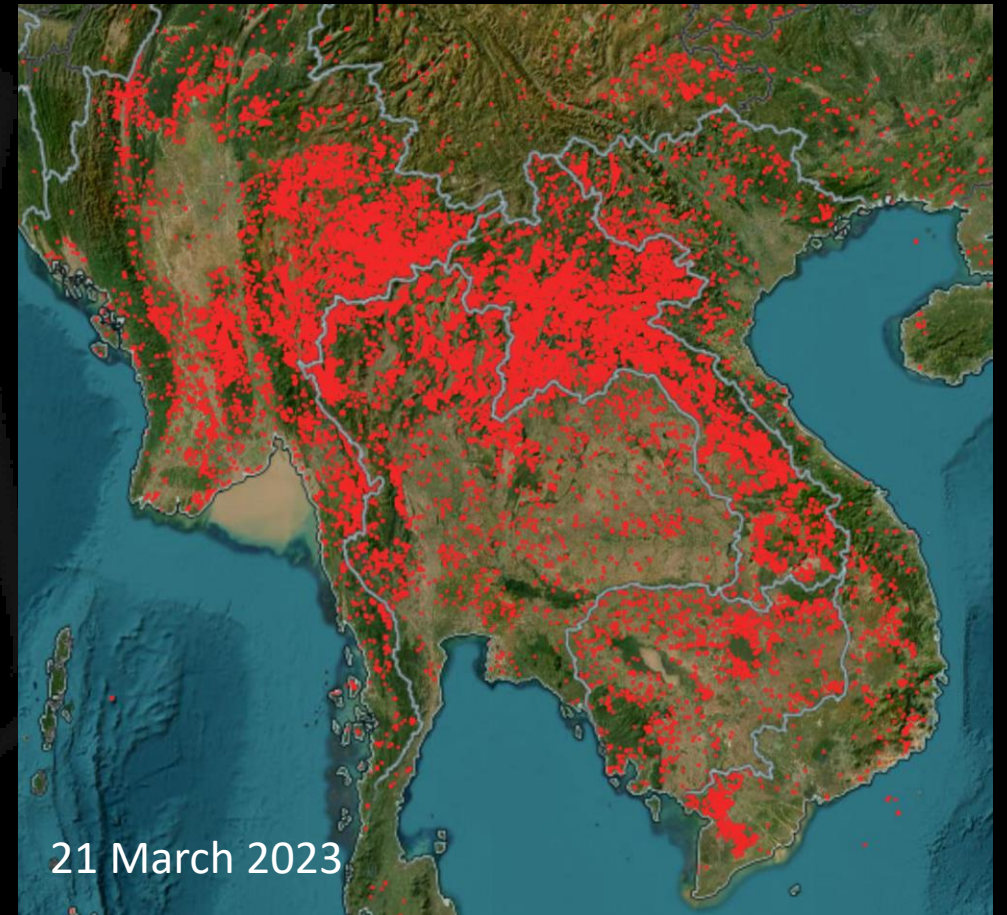
@MJGrosvenor
@KCLwildfire_EO

Earth Observation Data

CAMS (Copernicus Atmospheric Monitoring Service)
Surface Level PM_{2.5} Concentrations



NASA FIRMS (Fire Information for Resource
Management System) Hotspot Detections



Agricultural Burning



Clearance of crop residue

Agricultural Burning



Clearance of scrub

Agricultural Burning



Clearance of primary forest

Air Quality Sensor Network



68 Purple Air sensors
installed across 4
countries

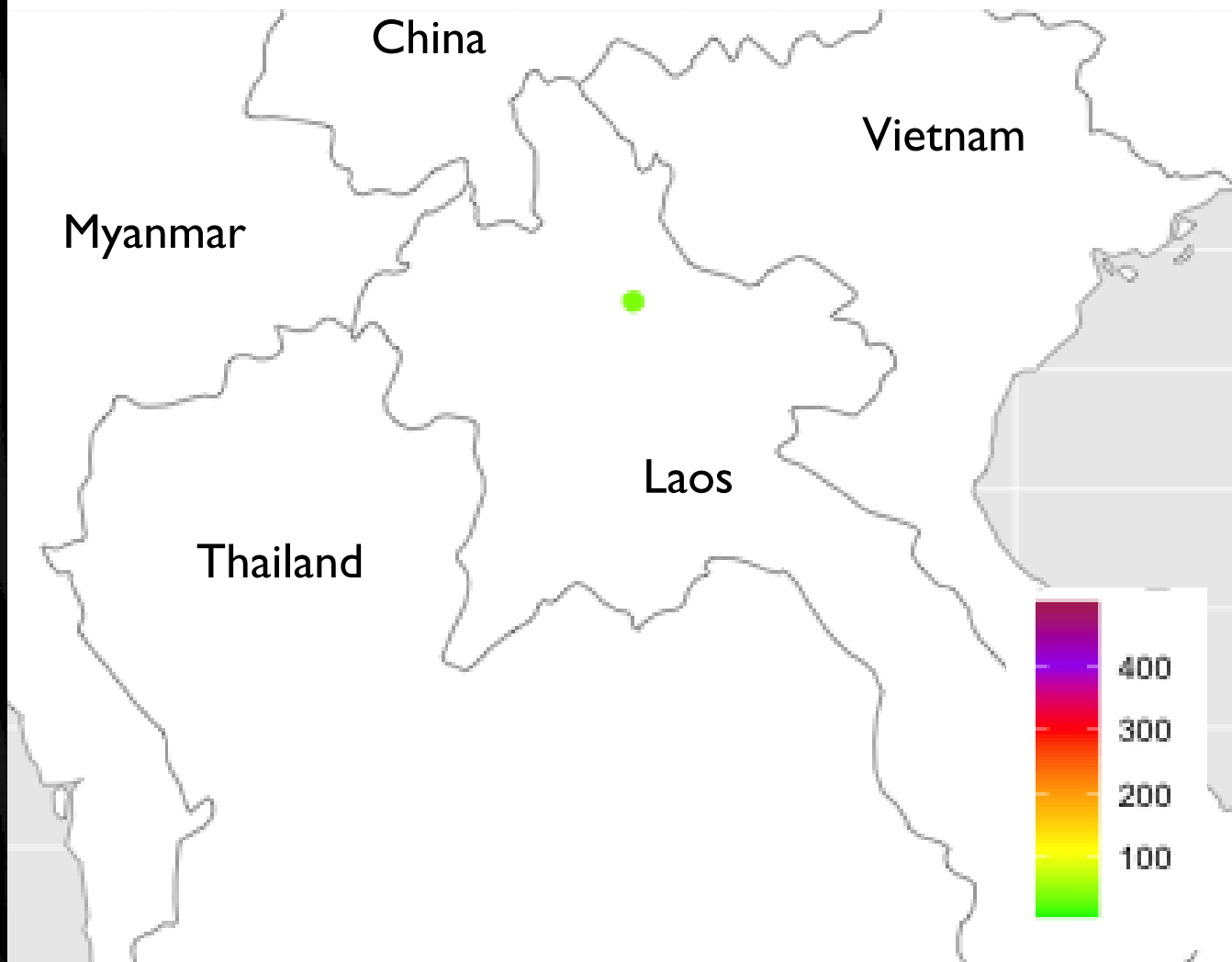
- Measuring PM_{10} , $PM_{2.5}$, PM_{10} , Temperature, Humidity
- WiFi connected (or via 4G hotspot)



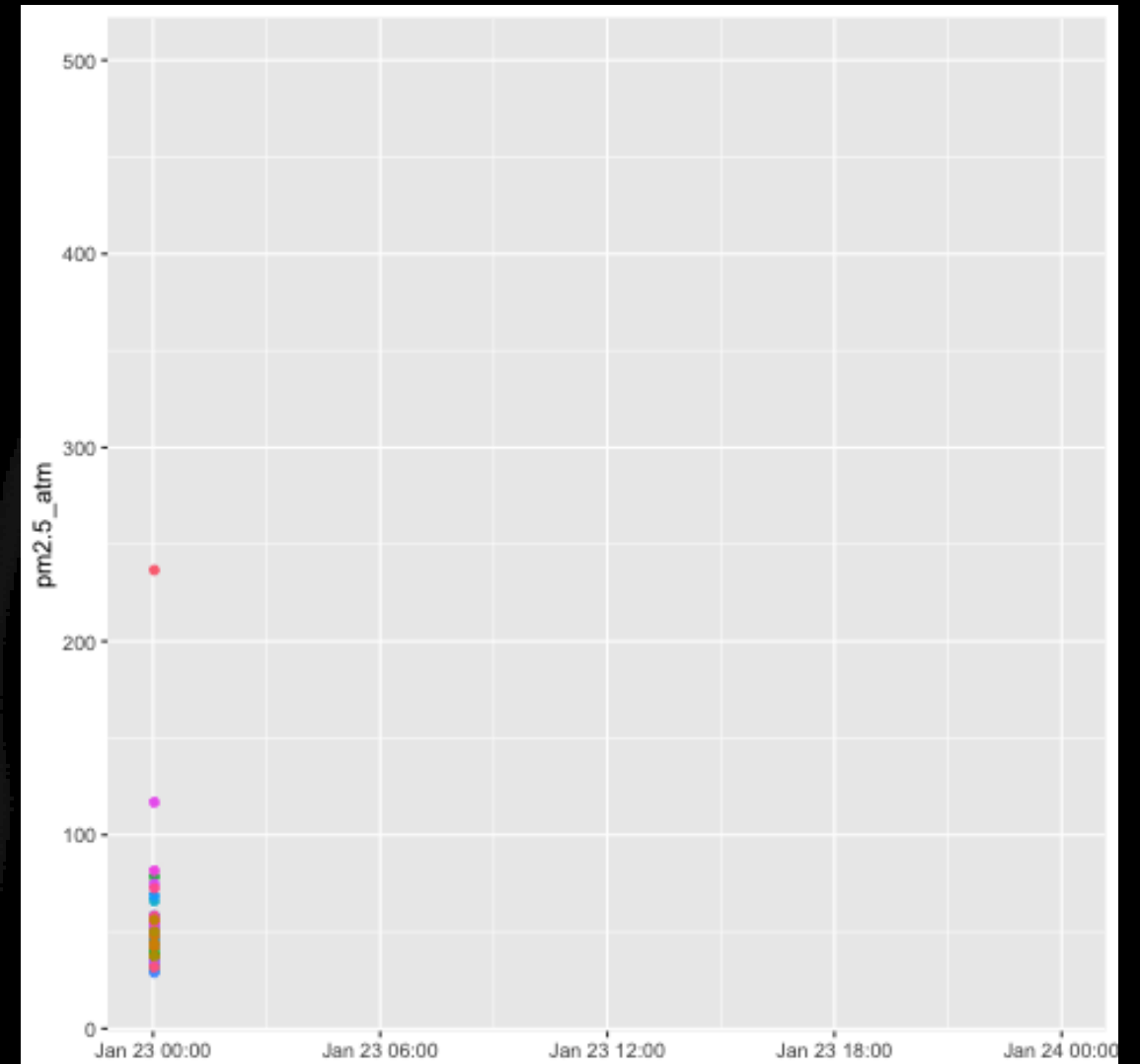
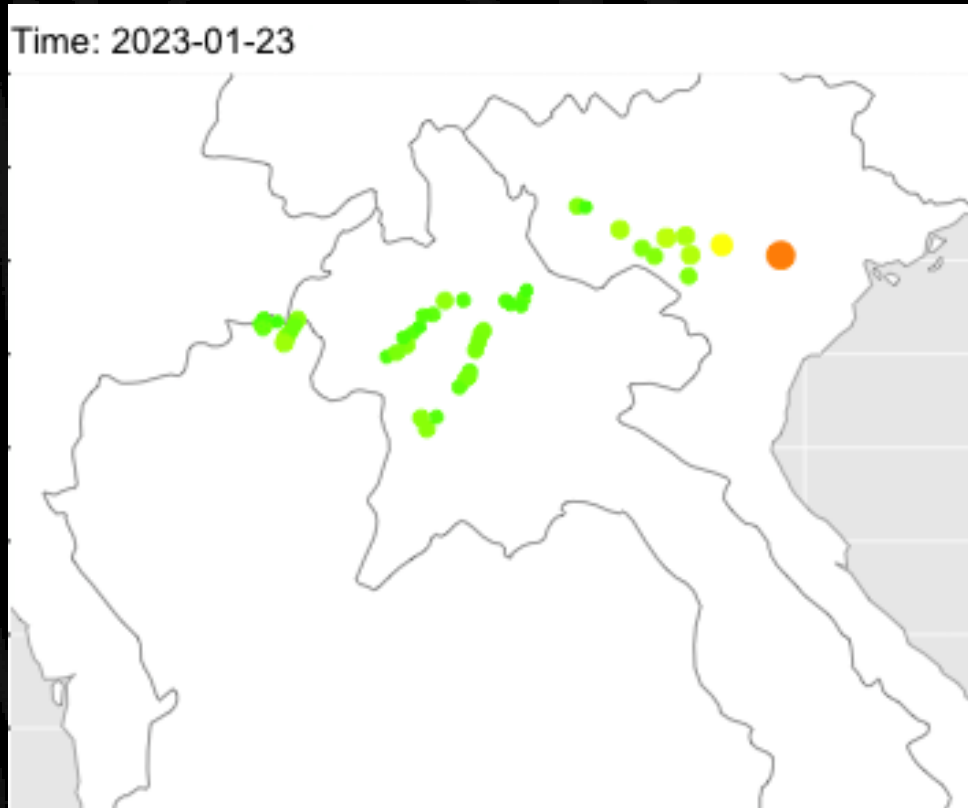


Air Quality Sensor Network

Time: 2023-01-09 15:40:00

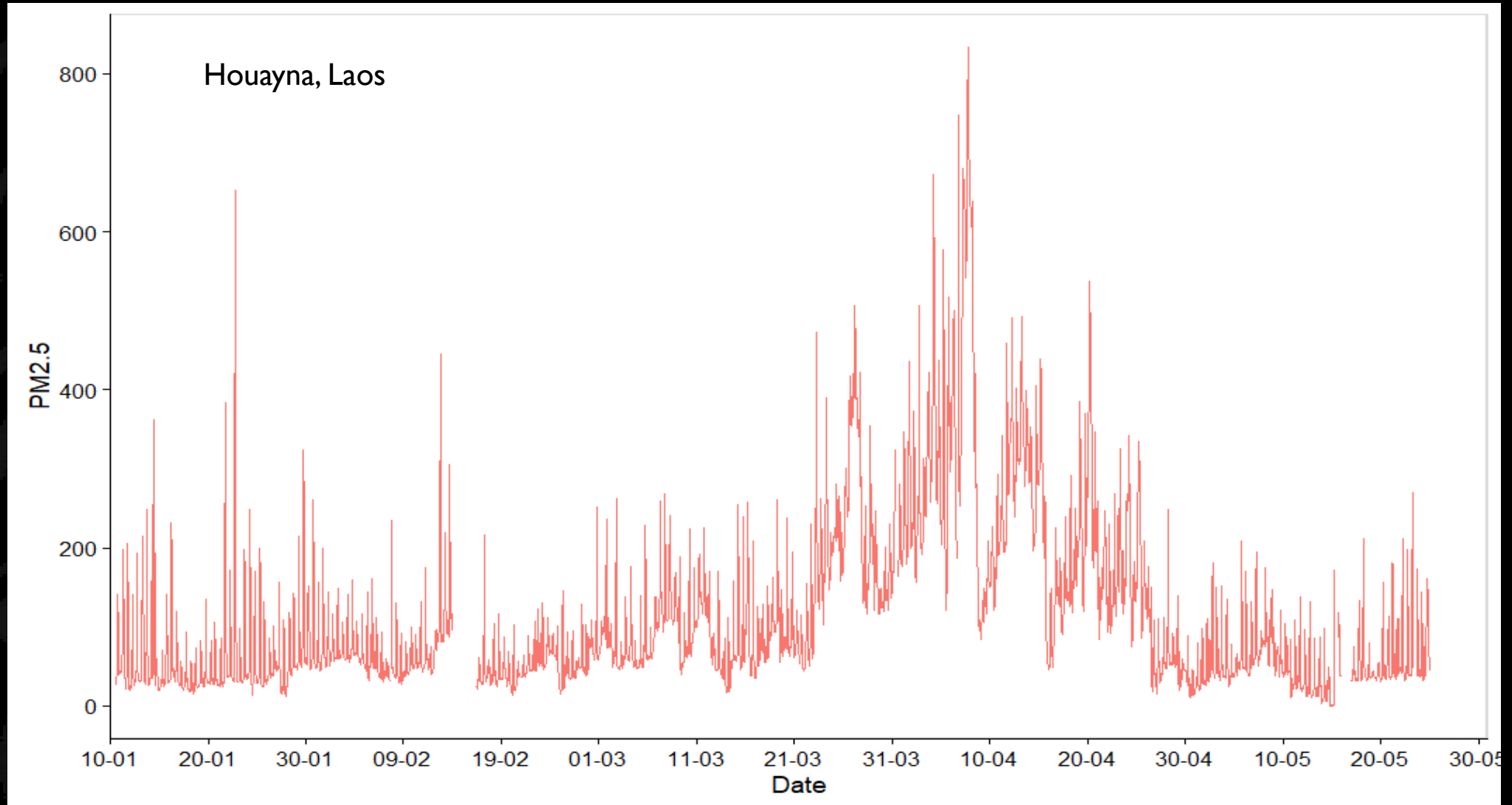


Pre-Fire Season Air Quality



<https://wildfire.geog.kcl.ac.uk/aq-network/>

Fire Season Air Quality



Fire Season Air Quality



Graphs removed – data not fully analysed



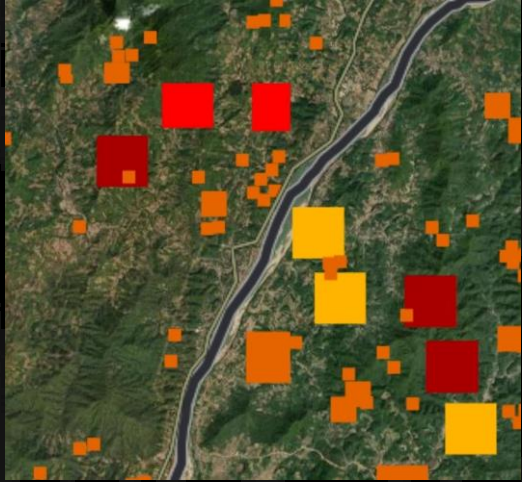
24h

12h day

12h night

12h night

Fire Emissions



Graphs removed – data not fully analysed





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Conclusions

- Significant localised background smoke from cooking
- Range of burning methods for agricultural purposes resulting in hazardous air quality
- Housing design means people cannot escape smoke
- Borders do not stop smoke

Acknowledgements

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