

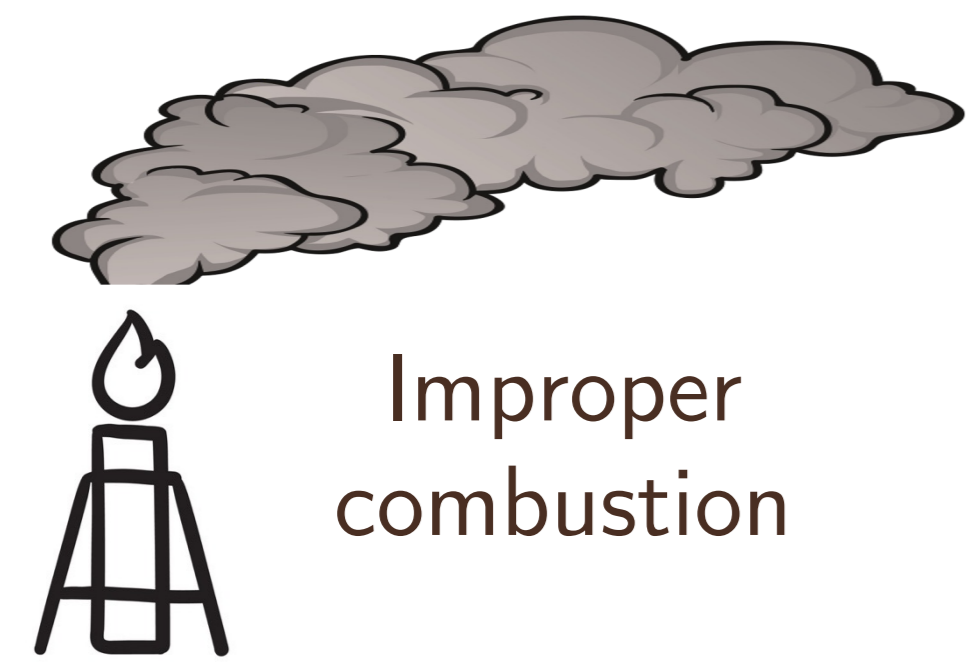
BLACK CARBON PLUMES FROM GAS FLARING IN NORTH AFRICA IDENTIFIED FROM MULTI-SPECTRAL IMAGERY WITH DEEP LEARNING

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GAS FLARING AND BLACK CARBON



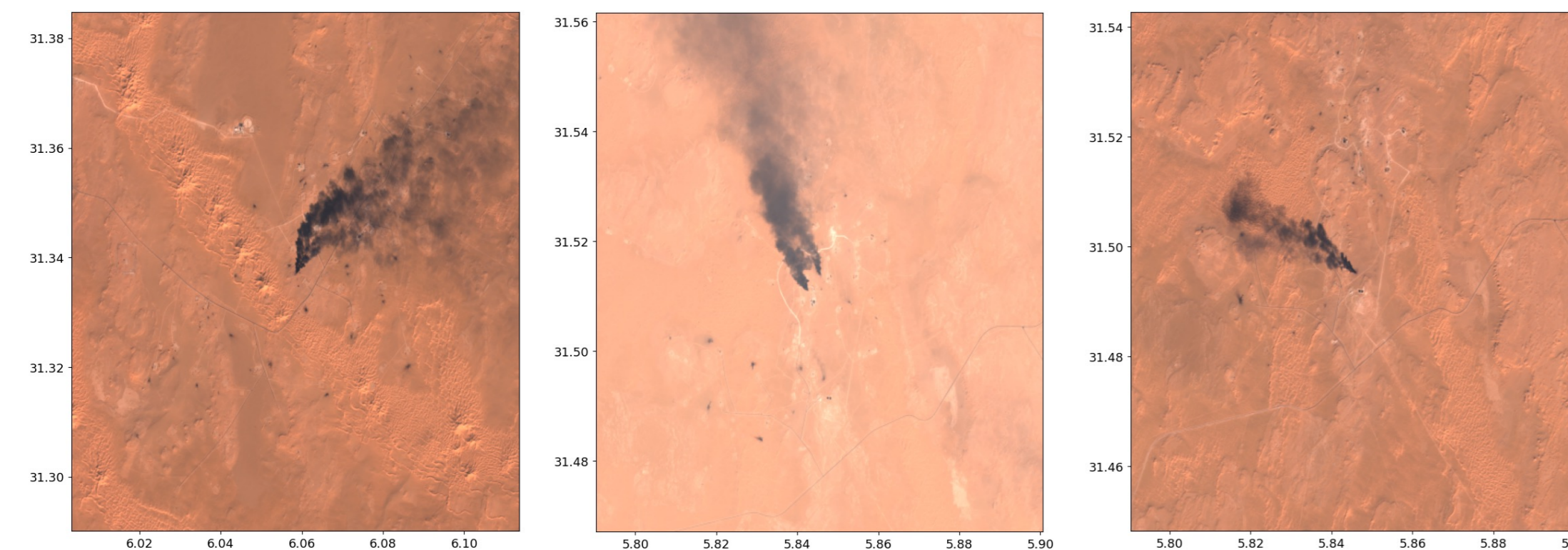
Black carbon (BC) emissions impact



Health



Climate



Satellite imagery



Frequent overpass (3-5 days)

Medium resolution (10 m)

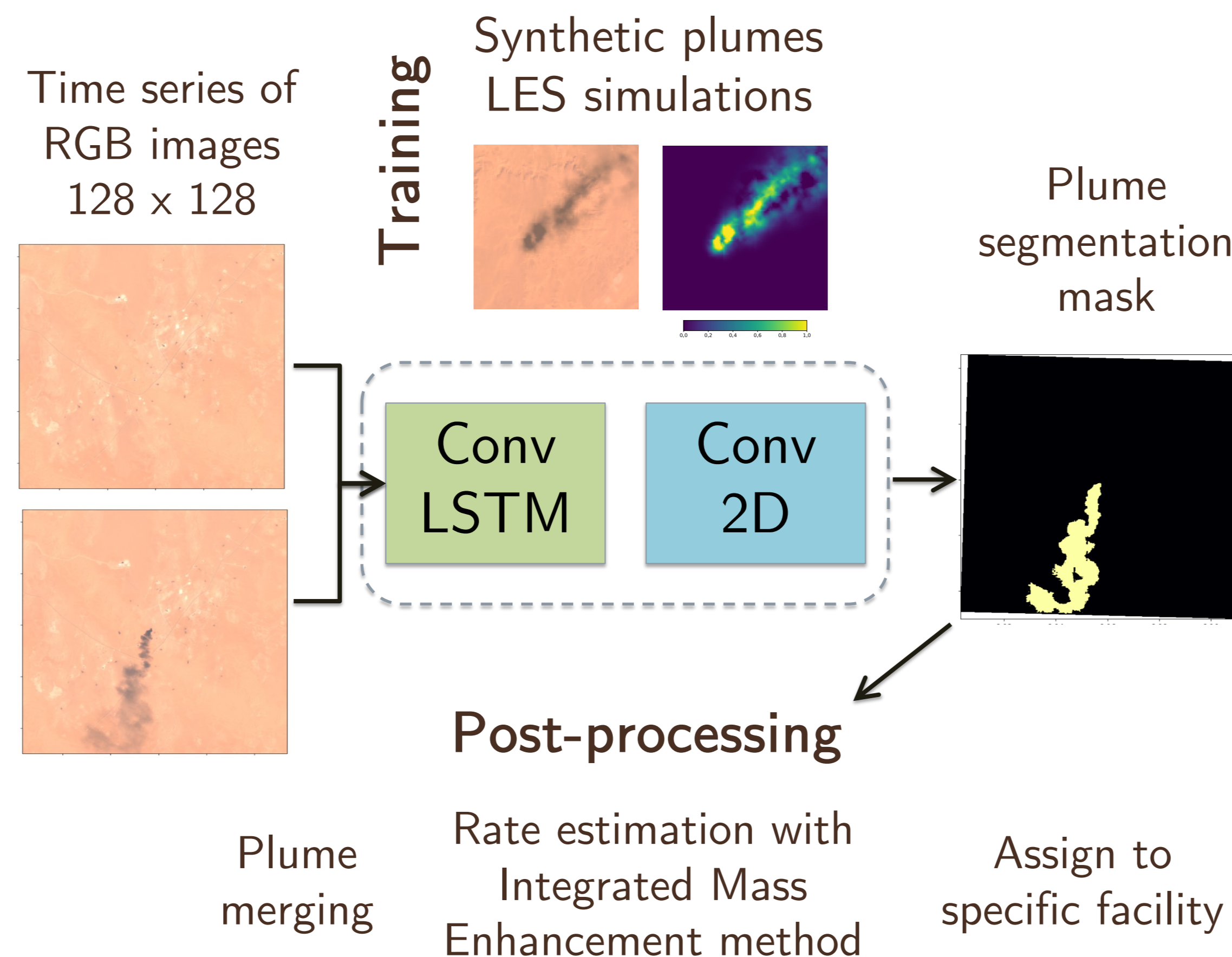
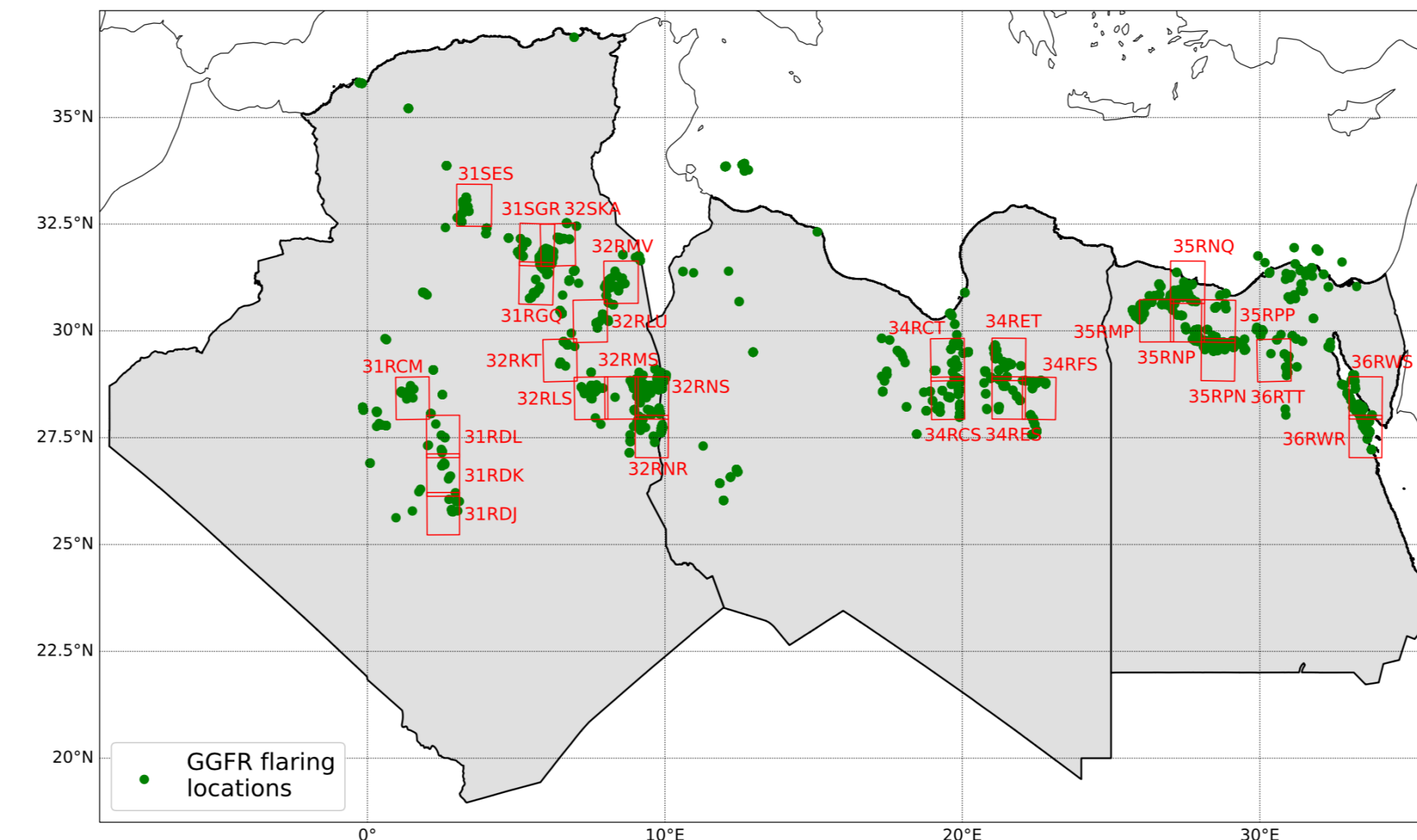
OUR PROJECT

- What? Detect and quantify BC emissions from flaring
- Where? North Africa: region of substantial oil & gas production and flaring activity (World Bank GGFR¹)
- How? Deep Learning approach using satellite imagery

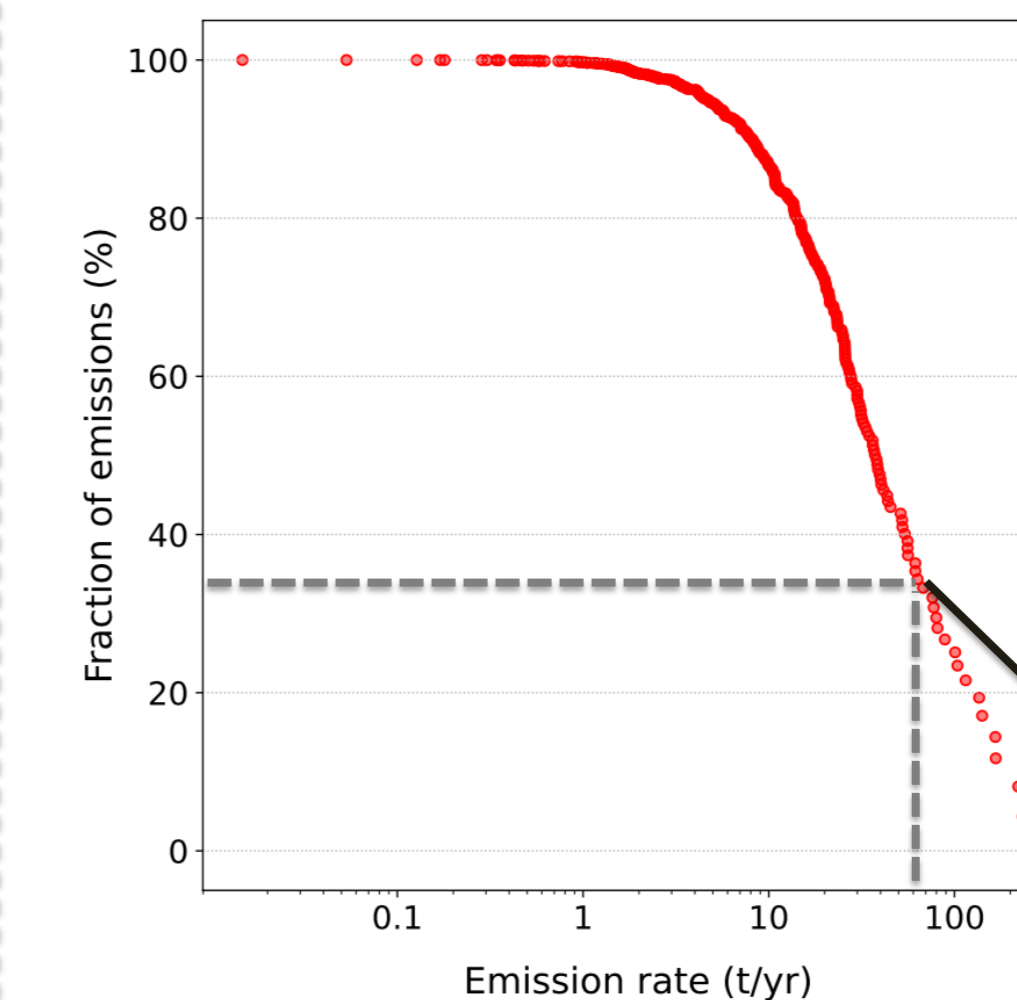
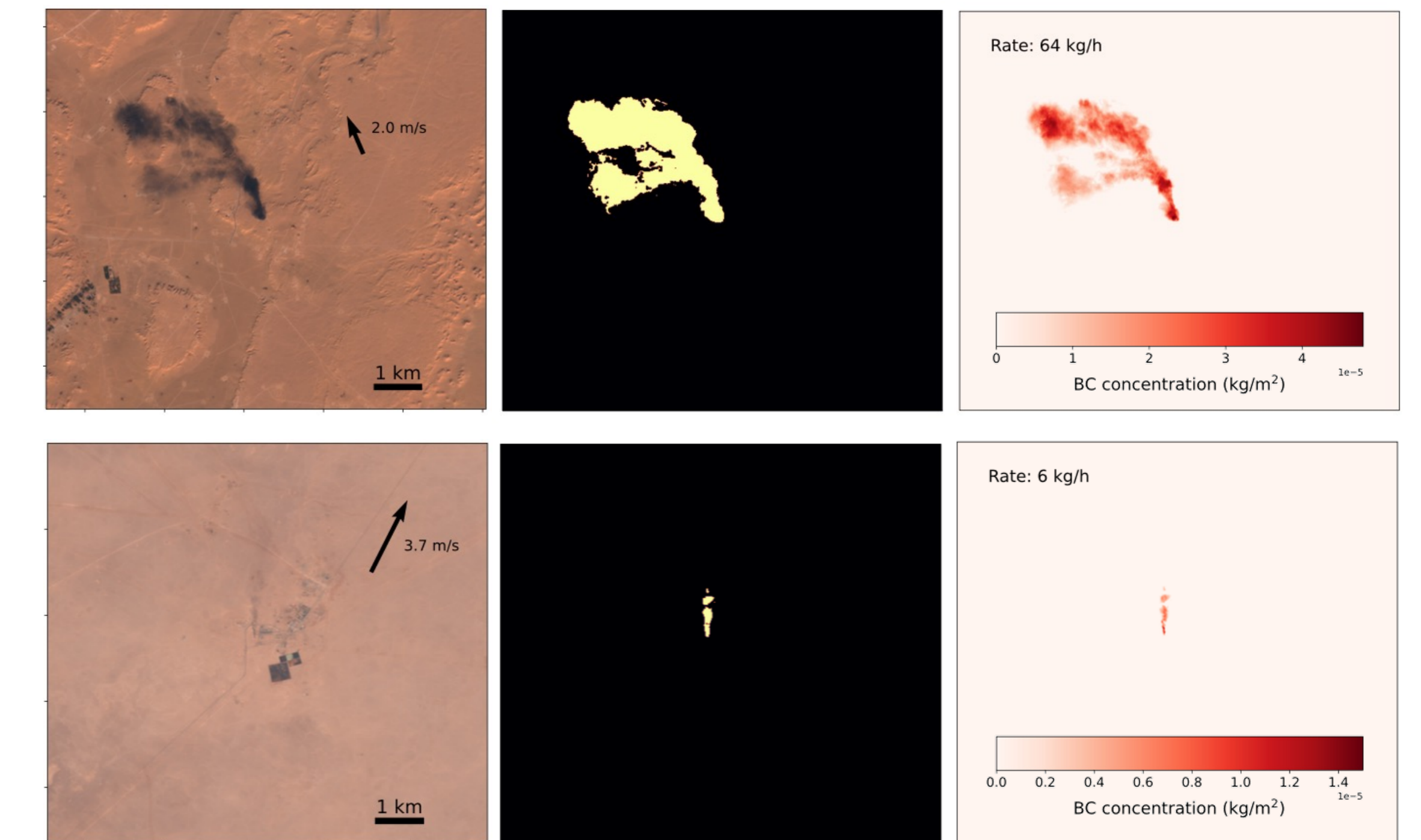
¹ <https://www.worldbank.org/en/programs/gasflaringreduction/global-flaring-data>

BC MONITORING WITH DEEP LEARNING

Monitor 80% of flaring locations during 2022



RESULTS



6.5 Gg of BC in 2022
3-6 million tCO₂eq
~ 1 million cars
Algeria = 75% of total

10 sites = 27% of emissions

First-ever direct and operational monitoring of BC emissions from flaring
Allows to pinpoint largest polluters
Critical insights for decarbonation