

Improving Decision-Making Tools in the West

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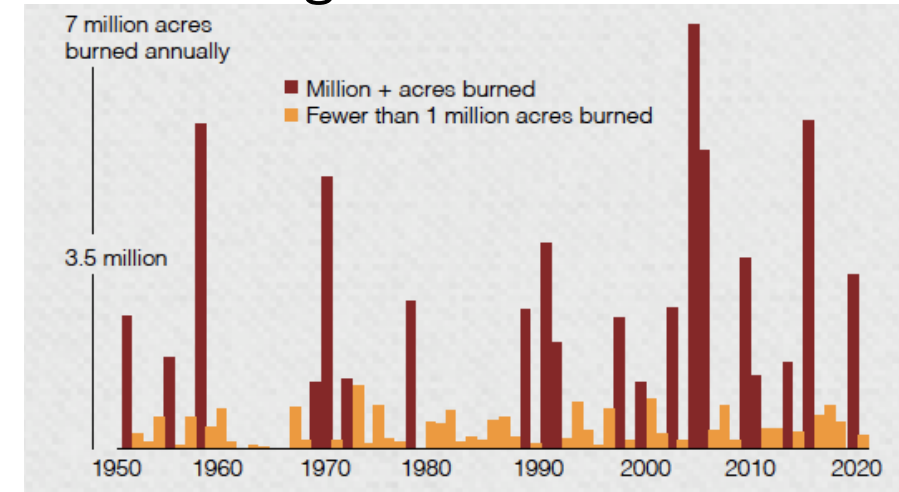
Jun Wang
University of Iowa



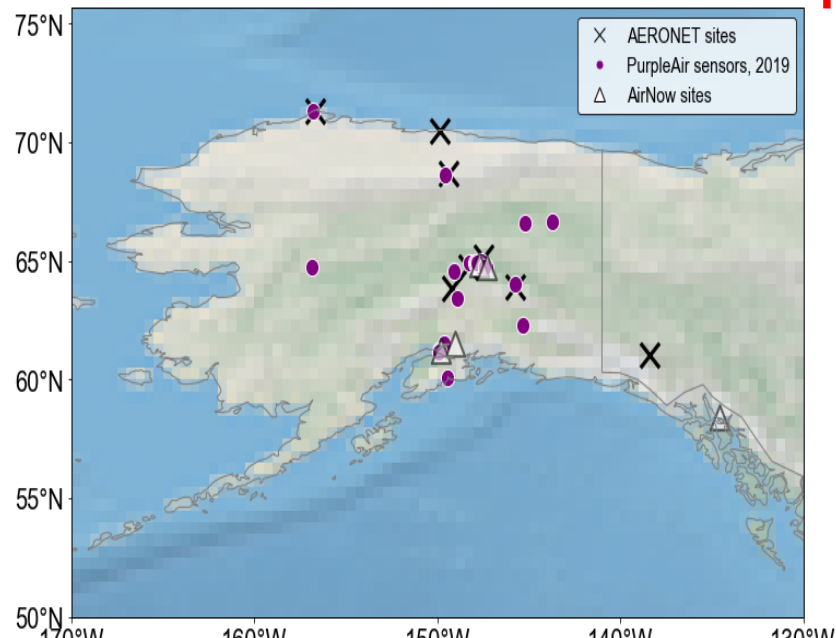
Alaska wildfire accounts for a major fraction of burning areas in US



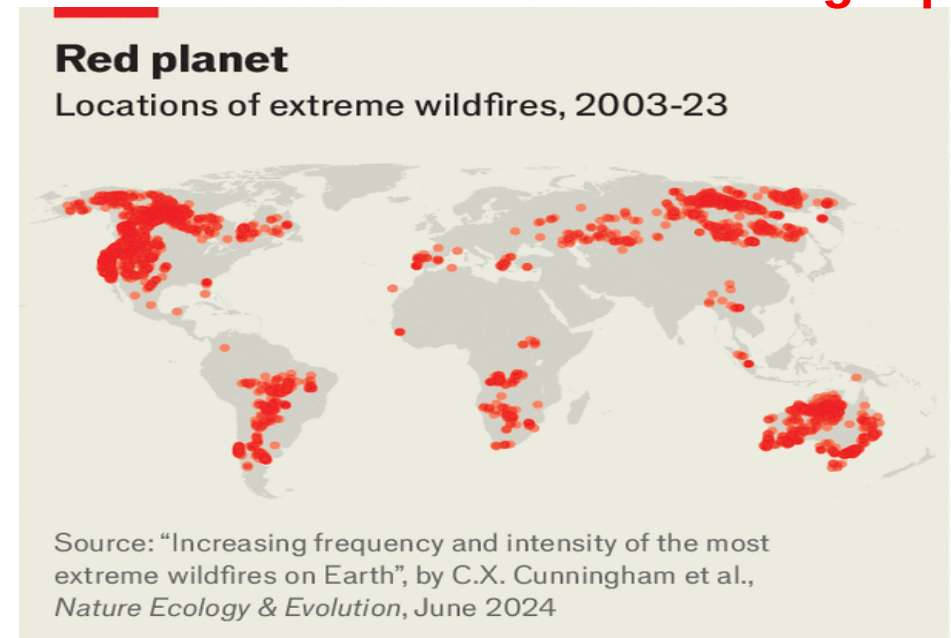
Burning area in Alaska



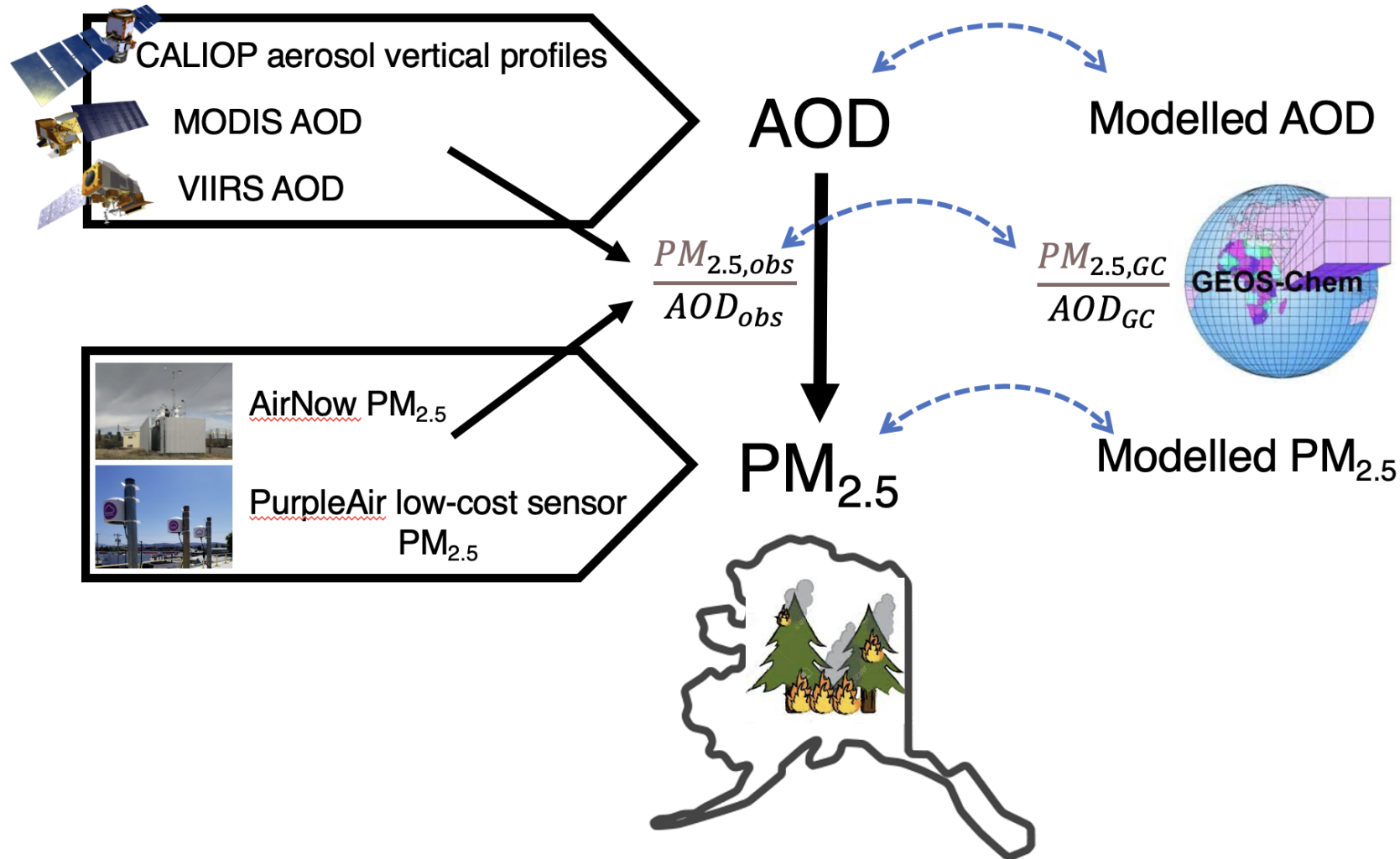
Ground-based measurements are sparse in Alaska



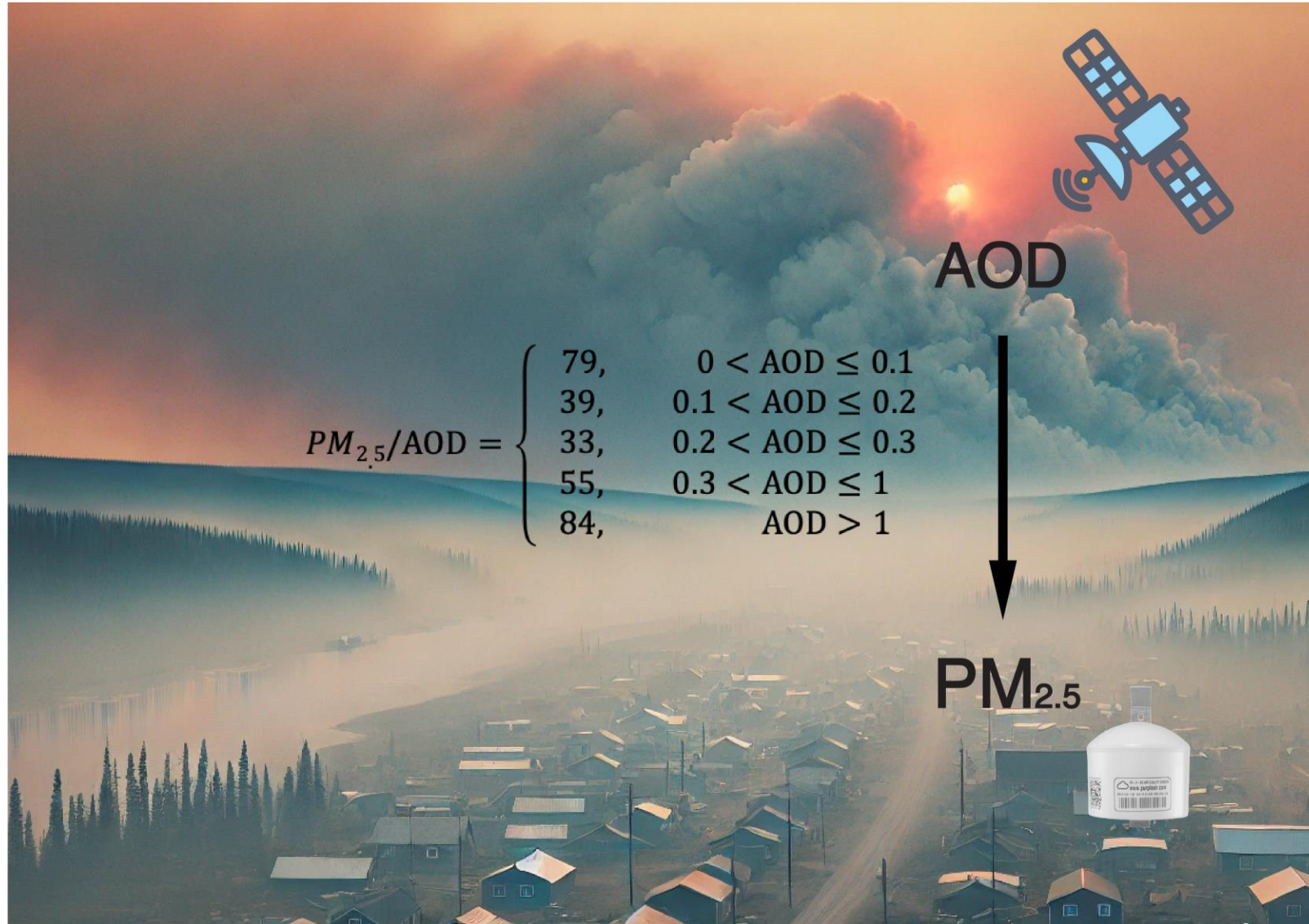
Extreme wildfires are increasing rapidly



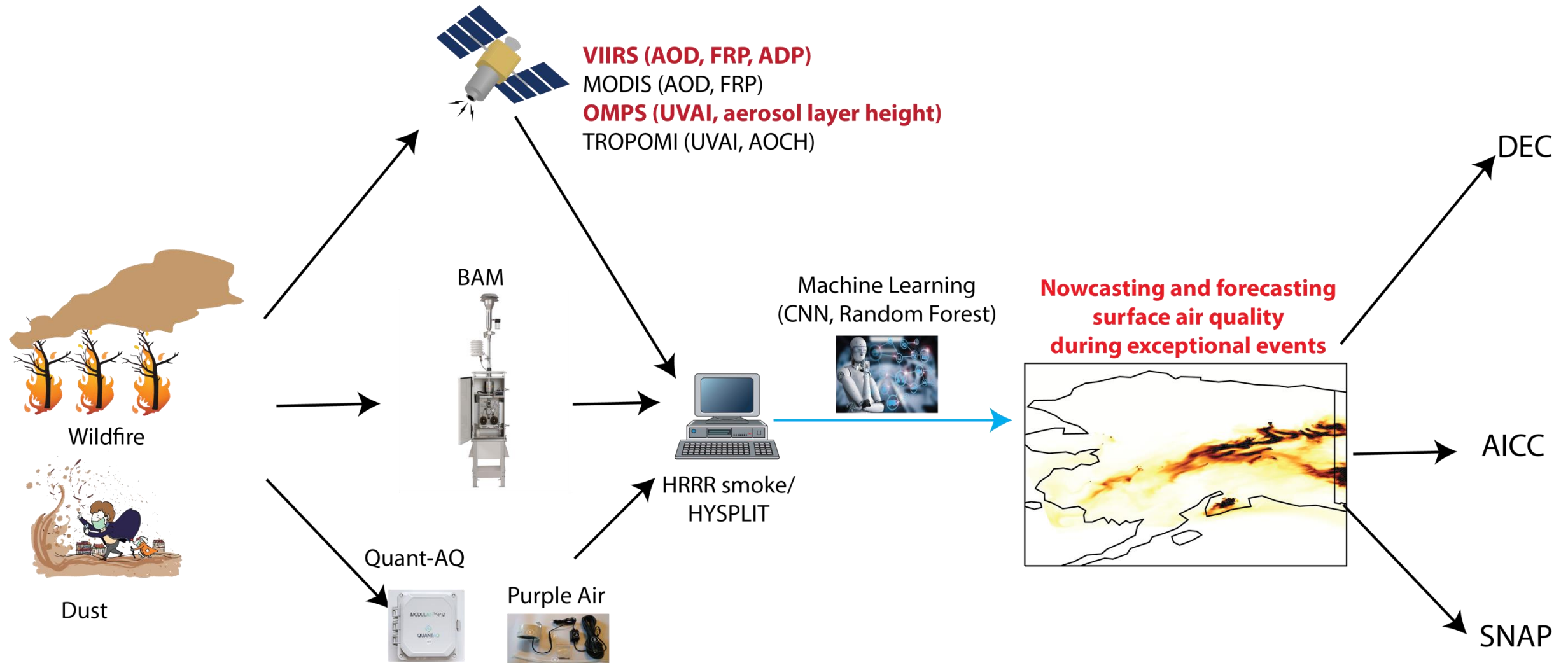
Use multiple satellites to derive surface air quality in Alaska during wildfire season



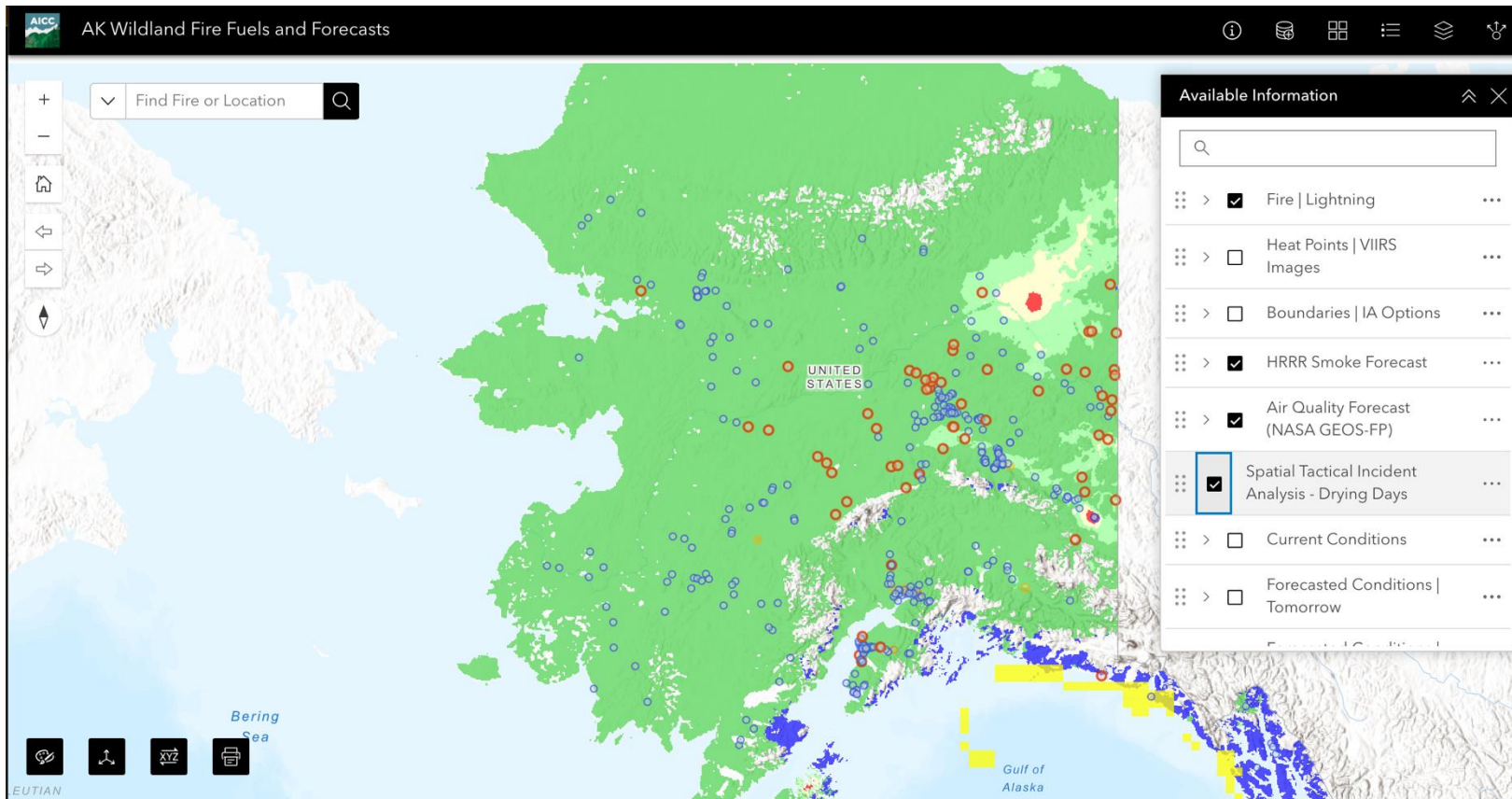
A quick and direct method to estimate daily surface PM_{2.5} during wildfire season



A Roadmap for Future Applications in Surface Air Quality in Alaska



An integrated ArcGIS system for wildfire management



Strong partnership between university and Jenn Jenkins (Bureau of Land Management Alaska Fire Service), Heidi Strader (National Park Service), Eric Stevens (National Park Service).



NASA Fire Light Detection Algorithm v2 (FILDA-2)

Fire Modified Combustion Efficiency (MCE) Products :

MCE, Fire Radiative Power (FRP) Visible Energy Fraction (VEF)

JPSS-1 & SNPP Vxx47MOD/IMG

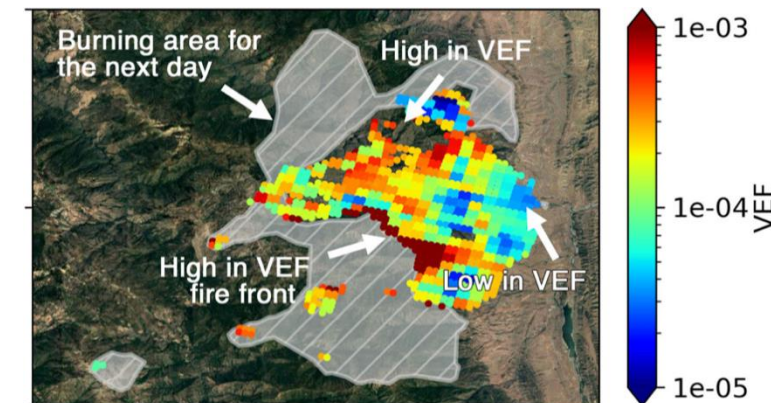
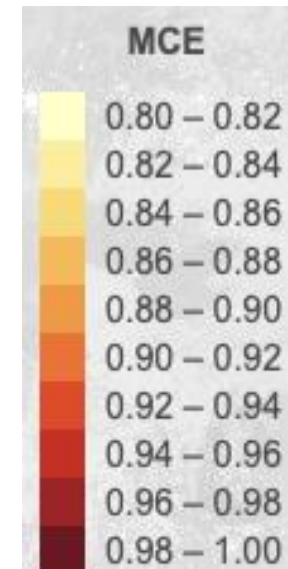
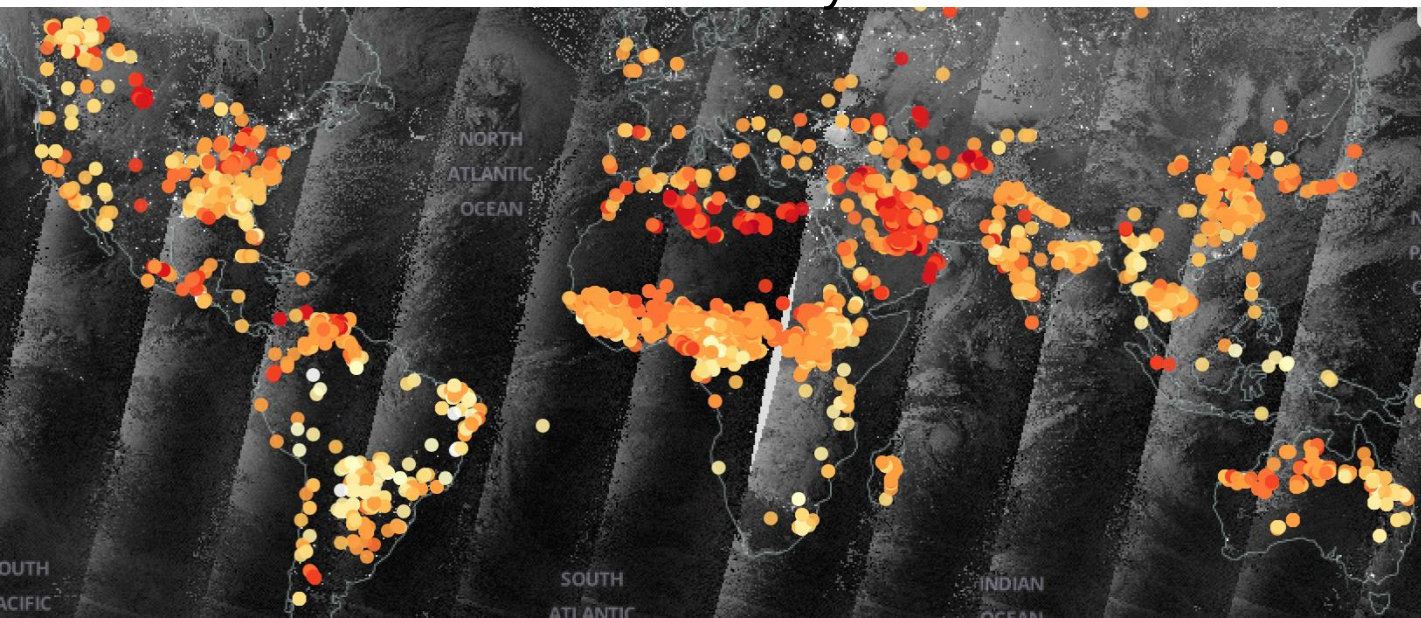
New:

- Enhanced nighttime fire detection by up to 30%
- Daily global nighttime MCE at 750/375 m resolution for each individual fire incident
- Angular dependence-corrected FRP

Application:

Fire line tracking, fire emission and injection estimation

11 January 2025



Monitoring fire progression for the Los Angeles fire from space

FILDA2 MCE (2025-01-08)

