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Modeling the use of mobile modular gas samplers in near-field detection using HYSPLIT

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Lightning Talks

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Goal

Determine sampler network effectiveness in detecting Xe-133 as a function of sampler density and distance from emission point using atmospheric transport modeling.

Method

Atmospheric transport modeling using inline WRF-HYSPLIT. Parameters varied: number of samplers, release date, release duration, and sample collection interval.

Results, Conclusions, Next Steps

- Primary plume detected in 56/80 scenarios
- Secondary plume not detected
- Sampler density important for network effectiveness
- Sufficiently dense network could detect 1013 Bq 133Xe release up to 15 km away
- Study could be expanded by reducing parameter granularity, considering other isotopes, and increasing number of simulations