

Regional observability of very slow diffusion processes

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This talk starts by introducing the fugitive methane leak detection problem using one or a swarm of small unmanned aerial systems (UAS) with a ppb (parts per billion) level of sniffer payload. Abstract formulation using Hadamard-Caputo fractional order diffusion equation is introduced. Then regional observability concepts and conditions are discussed which can be helpful in UAS mission planning for efficient source seeking.