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CARES Visiting Scientist Seminar Series:

Using an Unmanned Aerial Vehicle for Monitoring Urban and Maritime Pollution

Dr Molly Haugen; Senior Research Associate, University of Cambridge

Thursday 20 April 2023, 10am - 12pm

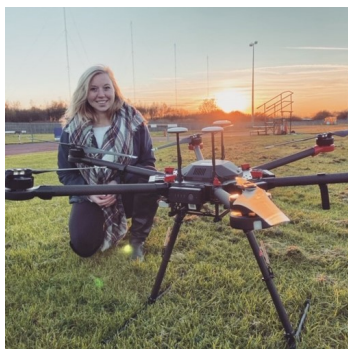
[Talk] CREATE Theatrette, Level 2, CREATE Tower

[Demo] UTown Green outside CREATE Tower



Cambridge Centre for
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Abstract: An unmanned aerial vehicle was used to monitor particle emissions for in-use maritime vessels in Rafina, Greece, a port serving primarily passenger ferries to nearby islands, in September 2021. This field campaign had two primary objectives: 1) Collect drone-based measurements that would measure the vertical component for a direct plume dispersion that can be used in emission modelling communities, by the public health sector, as well as decarbonisation initiatives, and 2) To show how both urban and maritime pollution can be monitored using an unmanned aerial vehicle to get spatially resolved information on harmful pollutants. The sensors used included AethLab Aethalometers that measure black carbon, TSI P-Traks that measure the number of particles in a given sample volume, and Nanos Partectors that determine Lung Deposited Surface Area (LDSA) of a particle. Although particle sensors were used for this campaign, gaseous sensors can also be used.



Biography: Dr Molly Haugen is a Senior Research Associate in Emissions Measurement at the University of Cambridge. Her work with Prof Epaminondas Mastorakos (Cambridge PI on the C4T IRP4 programme) focuses on plume dispersion in ports and urban environments.

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