

SIZE-RESOLVED AEROSOL FLUXES ABOVE A MIXED FOREST ECOSYSTEM IN FLANDERS

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Abstract:

Vegetated canopies, acting as impaction surfaces for the atmospheric aerosol, have been commonly identified as an effective sink for aerosol particles. However, forested areas may also behave as aerosol emitters, enriching the surrounding environment with pollens, spores and various species of secondary aerosol. To deepen the understanding of the bidirectional aerosol exchanges between a mixed forest ecosystem and the atmosphere, a measuring campaign was carried out from March to October 2020 in the Aelmoeseneiebos, a Belgian forest distancing about 15 km from the city of Ghent. A coupled system composed by an ultrasonic anemometer (HS50, Gill, UK) and an Electrical Low Pressure Impactor (ELPI+, Dekati, FI) was installed on the top floor of a 35 m high scaffolding tower. To gain insight into the in-canopy processes contributing to the observed fluxes, 5 Arduino-based loggers equipped with low cost PM, T and RH sensors were placed on the tower along a vertical profile. The results of this measuring campaign will be presented in this talk and will be interpreted on the basis of meteorological parameters (temperature, relative humidity, wind speed and wind direction), geographical information (proximity to the city of Gent and the North Sea) and information about the seasonal variability of the forest (presence or absence of leaves, pollen emission or spores release).

Webinar

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