



EXTERNAL SEMINAR
AARHUS UNIVERSITY
DEPARTMENT OF ENVIRONMENTAL SCIENCE
FREDERIKSBORGVEJ 399, 4000 ROSKILDE

29 OF MARCH 2017, 13.00 – 14.00
Venue: ENVS – THE PAVILION

Title: Polar sea ice-ocean-atmosphere biogeochemistry

New evidence for climate signal from biota via new particle formation

Speaker:

Dr. Manuel Dall'Osto,
Departament de Biologia Marina i Oceanografia, Institut de Ciències del Mar, Barcelona, Spain.

Abstract:

Climate warming affects the development and distribution of sea ice, but at present the evidence of polar ecosystem feedbacks on climate through changes in the atmosphere is sparse. In this presentation, I will show main results carried out at the ICM-CSIC Barcelona (Spain) with a number of interdisciplinary collaborations. Three main results are shown: (1) by means of synergistic atmospheric and oceanic measurements in the Southern Ocean near Antarctica, I present evidence that the microbiota of sea ice and sea ice-influenced ocean are a previously unknown significant source of atmospheric organic nitrogen, including low molecular weight alkyl-amines; (2) with an aerosol categorization of aerosol size distributions taken at Mt Zeppelin (Svalbard) during a 11 year record, I show how atmospheric nitrogen and sulphur tracers link these frequent nucleation events to biogenic precursors released by open water and melting sea ice regions; and finally (3) some preliminary cluster analysis of aerosol collected during the 2009-2016 period at Station North. I also aim to suggest possible collaborations on sea ice-ocean-atmosphere biogeochemistry on an coming Arctic cruise.

Host:

Camilla Geels, senior scientist, Atmospheric Modelling Section (ATMO)
Andreas Massling, senior scientist, Henrik Skov, professor, Atmospheric chemistry and physics (ATPRO)

External guests interested in attending the presentation should email
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