



## AVVISO DI SEMINARIO

**“Istituto di Scienze dell’Atmosfera e del Clima” U.O.S. Lecce**

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### **Prof. Dr. Andreas Held**

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Member of the Bayreuth Center of Ecology and Environmental Research (BayCEER)  
Steering Committee

### ***Aerosol formation, growth and transport in a spruce forest***

**Martedì 13 Febbraio 2018, ore 10:00, Sala Biblioteca I Piano  
Istituto ISAC-CNR  
str. prov. Lecce - Monteroni, km 1.2- 73100 Lecce**

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Atmospheric oxidation of biogenic volatile organic compounds (BVOC) contributes to secondary organic aerosol formation and particle growth, with large implications for the atmospheric aerosol's climate and health effects. In order to evaluate these effects, not only aerosol formation but also atmospheric transport and removal from the atmosphere has to be quantitatively studied. At the Bayreuth Center of Ecology and Environmental Research (BayCEER) Waldstein ecosystem research site in the Fichtelgebirge mountains, Northeastern Bavaria (Germany), the turbulent transport of BVOC and aerosol particles has been quantified during new particle formation events in a spruce stand. The time scales of chemical reactions involved in gas-to-particle conversion have been estimated and compared with turbulent transport time scales through the canopy. Overall, particle deposition is dominant during new particle formation events but simultaneous nucleation mode particle emission fluxes and Aitken/accumulation mode particle deposition fluxes have been observed. These bi-directional aerosol fluxes can be explained by the interaction of chemical reactions (leading to particle growth with typical growth rates of 2 - 6 nm per hour) and turbulent transport.