

17  
2017

NOON TALK @ DIATI

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Please bring  
your own mug.  
Coffee and tea  
will be  
provided  
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**Venerdì 6 OTTOBRE 2017  
ore 12.00**

**Politecnico di Torino  
Sala Riunioni  
Primo Piano, DIATI ingresso 3**



**POLITECNICO  
DI TORINO**

Dipartimento di Ingegneria  
dell'Ambiente, del Territorio  
e delle Infrastrutture

**Prof. Francesco Laio moderates the discussion**

## **Alessandro Battaglia**

Associate Professor at the Department of Physics  
and Astronomy, University of Leicester, UK



## **“Microwave remote sensing of water in the atmosphere: status and challenges ahead”**

### **ABSTRACT**

For the past three decades active and passive space-borne and ground-based microwave remote sensing instruments have been providing unprecedented ground-breaking observations of the macro- and micro-physical structure of clouds and precipitation. These observations have significantly contributed to improving the understanding of the global and zonal energy budget and the regional monitoring of extreme weather events and of the hydrological cycle. Examples drawn from the CloudSat and the Global Precipitation Measuring NASA missions will be presented. Observations must be now exploited at improving numerical weather predictions and climate models (either via improving microphysical process parametrizations or via direct data assimilation) and at thoroughly linking atmospheric and (sub-)surface processes for societal applications. The way forward will be illustrated by touching upon ideas underpinning future space missions deploying radars, and by exploring new research avenues related to the monitoring of precipitation at high spatial and temporal resolution for urban areas.

### **BIOGRAPHY**

Alessandro Battaglia received the Laurea degree 110/110 cum laude in Physics from the University of Padova, Italy, with a thesis in particle physics, and the Ph.D. degree in Physics from the University of Ferrara, Italy with a thesis on “Microwave scattering from hydrometeors and radiative transfer in clouds and precipitation”. He was Assistant Professor at the Meteorological Institute, University of Bonn, Germany where he has completed his Professor Habilitation with a thesis on ‘Multiple scattering effects in radar systems: theory, modelling and observations’ (January 2011). He is currently an Associate Professor at the Department of Physics and Astronomy, University of Leicester, UK, Privat Dozent at the University of Bonn, and member of the UK National Center for Earth Observation. Since 2008 he has been a member of the NASA Precipitation Measuring Mission Science Team and he has been recently appointed to member of the ESA EarthCARE mission advisory group (May 2017). His research interests include remote sensing of clouds and precipitation with specific focus at developing future concepts of Doppler multi-frequency radars and at exploiting current datasets for improving climate and numerical weather prediction models. Currently he is Principal Investigator of four different projects funded by ESA, US Department of Energy, UK Natural Environment Research Council and UK National Centre for Earth Observation.

**Save the date for our next speaker-event, on November 8, at 13.00**