

### **3.111 Long-term changes in biogenic VOC emissions due to changing land-cover.**

Early Career Scientist

Presenting Author:

**Jana Doubalova**, 1) Charles University, Faculty of Mathematics and Physics, Dept. of Atmospheric Physics, Prague, Czechia; 2) Czech Hydrometeorological Institute, Prague, Czechia, [jana.doubalova@mff.cuni.cz](mailto:jana.doubalova@mff.cuni.cz)

Co-Authors:

**Katerina Sindelarova**, 1) Charles University, Faculty of Mathematics and Physics, Dept. of Atmospheric Physics, Prague, Czechia

**Claire Granier**, 3) Laboratoire d'Aérodologie, CNRS-Université de Toulouse, Toulouse, France; 4) U. Colorado/NOAA, Boulder, Colorado, USA; 5) Max Planck Institute for Meteorology, Hamburg, Germany

**Peter Lawrence**, 6) NCAR, CDG, Boulder, CO, USA

Abstract:

Emissions of biogenic VOC emissions are closely linked to vegetation distribution and vegetation biomass. These factors have been changing in the past due to natural processes in the Earth's system. But significant changes can be observed as a result of human activities, such as deforestation in the tropical forest and its replacement with agricultural land. Such land use / land cover (LULC) transitions affect the amount and chemical composition of VOC emissions from vegetation. The paper will present impact of LULC changes on BVOC emissions over the last decades since 1980 up to present as calculated by the emission model MEGAN (Model of Emissions of Gases and Aerosols from Nature). Annual global maps of vegetation distribution are simulated by the Community Land Model (CLM) land use data tool called Thesis. The Thesis tool incorporates information about dynamics and agriculture from the Global Land Model (GLM). MEGAN model is driven by the ERA-Interim meteorological fields. We will present temporal and spatial distributions of BVOC emissions calculated with varying meteorology and land cover, as well as with fixed meteorology and changing land cover, in order to pinpoint impact on emissions solely due to vegetation changes.