



## UFZ-Seminar



Research Unit

### Water Resources and Environment



16 November 2020, 10 a.m.

Room E01, Theodor-Lieser-Straße 4, Halle/Saale

### Francesco Marra

Institute of Atmospheric Sciences and Climate, National Research Council of Italy, Bologna, Italy

will give a talk on:

### **Novel approaches to extreme value analysis: applications of the Metastatistical Extreme Value distribution and potential for changing climatic conditions**

Quantifying the probability of exceedance of extremely rare precipitation events is crucial for hydrological design and risk management. The problem is generally addressed identifying a statistical distribution able to describe the extremes of long observational records. This requires assumptions that are sometimes difficult to support, and provides large uncertainties that can only be reduced at the price of additional hypotheses. The recently proposed Metastatistical Extreme Value (MEV) framework makes use of a different set of hypotheses to address the same scientific and practical questions. In this seminar, we discuss alternative applications of MEV that permit to address scientific questions that previously could not be tackled due to the large uncertainties or the adopted hypotheses. In particular, we will focus on the potential to utilize remotely sensed datasets, to derive projections of extreme precipitation quantiles under changing climatic conditions, and to understand the impact of orography on extreme precipitation.