

# Leipziger Meteorologisches Kolloquium

Donnerstag, 01.02.2024, 16:00 Uhr, LIM und online

Link: <https://docs.google.com/spreadsheets/d/1vZxgey4Ccfh3g3X8WHyWnJNhwmbE4uKdKqB8tzipS4fw/edit>

**Dr. Sabine Undorf (Potsdam Institut für Klimaforschung)  
(TU Delft, Niederlande)**

***“Attributing climate change and its impacts - opportunities and challenges from aerosols to food insecurity” (Abstract below).”***

Climate change is already influencing climate and weather around the World, impacting natural, managed, and human systems. Quantifying the degree to which observed changes, events, and impacts are a manifestation of climate change, however, is not trivial. This task is taken up by attribution science, whereas it is a hot topic of debate which studies exactly qualify under this term. In this talk, I will present a view on the field of attribution science that reflects the complexity and interdisciplinarity of the field as diverse as the causal links all the way from climate-relevant emissions to economic and non-economic losses and damages from climate change. I will then zoom in on two key parts within this spectrum. First, I will show results from recent and ongoing studies on the attribution of climate change impacts on the agri-food system, a key impact sector for human life on Earth, thereby illustrating different tools and data representative of other impact sectors. Secondly, I will reflect on the confounding role of anthropogenic aerosols in attributing climate and weather events as well as in quantifying climate risks in general. As these errors also propagate to impact quantifications, I will further discuss opportunities and highlight challenges in overcoming these omissions by joining both areas of the attribution spectrum discussed thus far. On the other hand, integration of ever more modelling steps and related uncertainties is not always desirable or possible, and I will argue that clarity on the aims, or specifically, the intended societal use, if any, of a specific attribution study should then determine the appropriate study focus and an acceptable methodological caveat. To support such decisions, I present three studies in which we scrutinize literature-suggested societal uses of attribution results: inform climate finance, motivate climate action, and provide justice by recognition.