Anmeldung eines Themas für die Bachelorarbeit

Thema Datum	Real-time measurements and source identification of aerosol particle metal composition 24.01.2024
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Kurz-beschreibung:	Atmospheric particles are a complex mixture of organic and inorganic compounds. Their chemical composition depends on the sampling location and their transport history prior to their arrival at the sampling place. One key inorganic component are the trace elements, that affect atmospheric chemical reactions as catalysts, and also drive the oxidative potential of the particles that increase the toxic ability of the particles and consequently their health effects. Recent improvements in technology make it possible to measure online the particulate elements allowing hourly resolution. The present topic focuses on the analysis of the first trace element measurements carried out at the TROPOS research station Melpitz during the winter 2024. To obtain a broader significance and implications of the results, the data will be combined with aerosol chemical composition measurements from an Aerosol Mass Spectrometer and an Aethalometer, as well as with meteorological parameters to identify the different sources of metals and their contribution to the total PM mass to provide new understanding to their fate in the environment.
Literatur:	[1] Furger, M., *et al.*, Atmos. Meas. Tech., 10, 2061–2076, 2017. [2] Fomba, K. W., *et al.*, Atmos. Env., 176: 60-70, 2018. [3] Zhu, Y. C. *et al.*, STOTEN, 908, 2024.