Master of Science Thesis Project

Observation and Evaluation of Aerosol Optical Depth (AOD)



Atmospheric aerosols, from both anthropogenic and natural sources, play a crucial role in the Earth system. They degrade air quality, pose risks to human health, and influence the climate. Understanding the accuracy of aerosol measurements and the spatio-temporal variability of aerosols is therefore essential for both climate research and environmental monitoring. In collaboration with the Meteorologisches Observatorium Lindenberg - Richard-Aßmann-Observatorium (MOL-RAO) of German Weather Service (DWD), the ALIC^{2}E research group of Heidelberg University is seeking a highly motivated Master's student to investigate aerosol optical depth (AOD) observations.

Research Tasks

- Conduct a two-week calibration campaign in Lindenberg, Germany, to evaluate Calitoo AOD measurements against reference photometer observations (e.g., AERONET).
- Examine the occurrence, intensity, and long-term trends of extreme aerosol events.
- Assess potential changes in the sources of extreme AOD extremes.

Requirements

- Strong interest in atmospheric science and environmental physics.
- Good academic performance.
- Experience in programming and data analysis (e.g., Python).

Supervisors:

Prof. Dr. Stephanie Fiedler (IUP, Heidelberg University)

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Please send a short motivation statement with your transcript of your grades.