



Announcement – Winter Semester 2025/2026

Processing and Visualisation of Air Quality Data

SWS: 4, LV-No. 610701015

Dozentin / Dozent:	Prof. Dr.-Ing. A. Blanco-Vogt, Dr.-Ing. U. Vogt
Vorlesungszeit / Time:	Fridays, 2:00 p.m. – 5:15 p.m. (17.10.2025 – 09.01.2026) Saturdays, 9:45 a.m. – 5:15 p.m. (25.10.2025, 29.11.2025, 10.01.2026, 31.01.2026)
Ort / site:	IFK, Pfaffenwaldring 23, Hörsaal V 23.01
Start of lecture:	17.10.2025

Content of lectures:

Introduction to air quality measurements and processing of data:

- outlayer tests,
- calibration / correction of data,
- determination of measurement uncertainty and other process parameters. Use of excel to process data with the help of power queries and pivot tables,
- preparation and visualisation of data from vertical soundings, e.g. balloon soundings or drone soundings with Excel,
- visualisation of time series from point measurements with open source software R:
 - diurnal, weekly, monthly, yearly courses as well as box whisker plots,
 - preparation of wind and air pollutants data from time series to visualise them in wind and pollution roses,
- Introduction to Python:
 - Data types and variables
 - Data structures
 - Flow Control
 - Functions, classes, modules and methods
 - Python applications
 - Data analysis
- Geographic Information Systems (GIS) will be taught.
 - fundamentals of a GIS, data representations, geo statistics, interpolation methods,
 - coordinate systems, some data collection techniques, visualisation of data of mobile measurements on maps using open source software QGIS and Python.