



Registration now open for the
CSH Autumn School 2025
GIS, Cartographic and Spatial Analysis in R

with **Christian Trautmann** and **Dr. Christian Bauer**
September 30th – October 2nd, 2025
Hohenheim

Overview

Join us at the CSH Autumn School 2025 to gain hands-on experience in GIS, cartography, and spatial data analysis using open-source tools such as QGIS and R.

The CSH Autumn School 2025 provides an in-depth, practice-oriented training in the fields of GIS, cartography, and spatial data analysis using powerful open-source tools like QGIS, R, and QField. Aimed at students and early-career researchers, the course is designed to build both foundational and advanced skills in geospatial data handling and analysis. The program begins with a mandatory online setup session on September 26, 2025, where participants will ensure their technical environment is ready, including installations of QGIS, R, RStudio, and QField on mobile devices.

Throughout the course, participants will gain direct experience with tools and workflows relevant to academic research, environmental studies, urban planning, and other spatially-focused disciplines. The final student project offers the opportunity to apply all acquired skills in a self-designed mini research case—encouraging independent thinking, data storytelling, and technical proficiency.

The learning goals are as follows:

- Understand the structure and processing of spatial data, including both vector and raster formats
- Apply basic and advanced methods of geospatial analysis using QGIS and R
- Work confidently with different coordinate reference systems (CRS)
- Acquire, process, and analyze satellite imagery and open vector data
- Collect field data using the QField app and GPS devices
- Develop and present a self-designed geospatial project independently

Lecturers

Christian Trautmann (Department of Phytopathology, University of Hohenheim) researches a drone-based monitoring system for plant diseases in crops.

Dr. Christian Bauer works at the Landwirtschaftliches Technologiezentrum (LTZ) with a focus on precision farming, digitalization, and remote sensing.



The schedule

University Hohenheim, 70599 Stuttgart.

Setup (via Zoom): September 26th, 2025, 15h00 – 17h00:

15h00 - 17h00	Check your technical setup.
Please install	QGIS, R-base, R-Studio, R-Tools (Windows only)
mobile device	Qfield (and get an account)
recommended	git, docker, exiftool

Day 1 (on campus): September 30th, 2025, 9h00 – 17h30:

9h00 - 10h30	Introduction to qGIS and basics in geospatial data processing
10h30 - 11h00	Coffee Break
11h00 - 12h30	Coordinate reference systems (CRS), vector & raster data analysis
12h30 - 13h30	Lunch Break
13h30 - 15h30	Introduction to RStudio and geospatial data processing in R
15h30 - 16h00	Coffee Break
16h00 - 17h30	Programming spatial data workflows in R

Day 2 (on campus): October 1st, 2025, 9h – 17h30:

9h00 - 10h30	Satellite Data – Introduction, download, processing
10h30 - 11h00	Coffee Break
11h00 - 12h30	Open-source vector data, availability & processing
12h30 - 13h30	Lunch Break
13h30 - 15h30	Field data collection using QField and GPS
15h30 - 16h00	Coffee Break
16h00 - 17h30	Wrap-up and project planning session

Day 3 (on campus): October 2nd, 2025, 9h – 17h30:

9h00 - 10h30	Remote Sensing Project in QGIS – Block 1
10h30 - 11h00	Coffee Break
11h00 - 12h30	Remote Sensing Project in QGIS – Block 2
12h30 - 13h30	Lunch Break
13h30 - 15h30	Project development and visualization
15h30 - 16h00	Coffee Break
16h00 - 17h30	Final discussion and presentation session



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Target Audience

The course mainly aims at Master and PhD-students interested in processing spatial data. Basic knowledge in statistics, calculus, and R (or at least a similar programming language) is required. Experience with machine learning and data handling is useful.

Fees, Devices and Credits

Interested participants can register via weiterbildung.uni-hohenheim.de for the workshop until September 15, 2025.

For external participants the following tuition fee structure applies:

Group	Through August 15, 2025	After August 15, 2025
	(prices in EUR)	(prices in EUR)
Students	50.00	100.00
PhD students / Staff Members	120.00	150.00
PostDocs	160.00	200.00
Professors	240.00	300.00

Outstanding fees have to be wired as indicated in the payment instructions. An email with detailed payment instructions will be send to participants after registration and before the workshop. Registration is binding. Fees transferred are non-refundable.

Participants should bring their own laptop (incl. charger) with a working Linux, Mac or Windows/WSL installation. R and RStudio should also be installed.

At the conclusion of the Autumn School, participants will receive a certificate for the number of hours attended.

Contact

For any further information please contact

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