

Module title		Abbreviation
Selected spatio-temporal environmental Methods		04-GEO-MET10-212-m01
Module coordinator		Module offered by
holder of the Professorship of Remote Sensing		Institute of Geography and Geology
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
<p>This course focuses on the joint analysis of different spatio-temporal data. It introduces (1) methods to process, visualize and analyse spatio-temporal trajectory data such as animal movement data, traffic movement data or other kinds of tracking data and (2) methods to combine Earth observation data such as remote sensing imagery with trajectory data for joint analysis. The course focuses on techniques from both the discrete and the continuous time modelling approaches. It uses such to derive and quantify common trajectory metrics such as sampling frequency or telemetry error, space use, corridors, stopping sites etc. in an automatized manner. The course lays a practical focus on implementing the learned methods with a programming language such as R or Python.</p>		
Intended learning outcomes		
<p>Participants learn the skills to handle trajectory data, understand their dimensionalities, their metrics, their challenges and limitations but also their potentials. An important learning aim is to develop a base knowledge on which kind of ecological or environmental analyses using trajectory data could be well supplemented by Earth observation data and vice versa. Understanding trajectory data and what is special about it compared to other spatio-temporal data and understanding the applicable methods are key to later-on be able to use trajectory data of any kind in scientific work.</p>		
Courses (type, number of weekly contact hours, language — if other than German)		
S (1) + Ü (1) Module taught in: English		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
<p>a) presentation (approx. 30 minutes) or b) preparing a poster (approx. 10 hours total) or c) term paper (approx. 15 pages) Assessment offered: Once a year, summer semester Language of assessment: English or German (assessment will be held in English; in addition, the examiner may, where possible, decide to hold assessment in German) creditable for bonus</p>		
Allocation of places		
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Additional information		
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Workload		
150 h		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)		
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