Module description

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		od of grading	Only after succ. compl. of module(s)		
5 numerical grade					
Duration		Module level	Other prerequisites		
1 semester		graduate			
Contents					
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 form both the discrete and the continuous time modelling approaches. It uses such to derive and quaintify 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.					
Participants learn the skills to handle trajectory data, understand their dimensionalities, their metrics, their chal- lenges and limitations but also their potentials. An important learning aim is to develop a base knowledge on which kind of ecological or environmental analyes using trajectory data could be well supplemented by Earth ob- servation data and vice versa. Understanding trajectory data and what is special about it compared to other spa- tio-temporal data and understanding the applicable methods are key to later-on be able to use trajecotry data of any kind in scientifc work.					
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)					
a) presentation (approx. 30 minutes) or b) preparing a poster (approx. 10 hours total) or c) term paper (approx. 15 pages) 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) Assessment offered: Once a year, summer semester creditable for bonus					
Allocation of places					
Additional information					
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)					

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