Module name	**Retrieval of Land Surface Properties from Optical and Microwave Remote Sensing**
Module number	CMS-TRK-ED6
Senior Lecturer	Prof. Dr. Matthias Forkel matthias.forkel@tu-dresden.de
Qualification objectives	Students are familiar with methods and current developments to derive biophysical land surface properties. They are capable of describing, applying and critically assessing empirical and physical discharge methods.
Contents	The content of the module shall include methods to derive land surface properties such as leaf area index, chlorophyll content, leaf and vegetal water content, biomass and soil moisture using empirical and physical-based modelling approaches, optical and microwave-based vegetation radiation transfer models, model inversion with regression and optimisation techniques, and selection and definition of cost functions.
Forms of teaching and learning	The module includes seminars of 2 SWS and self-study. The teaching language of the seminars may be German or English and will be specifically determined by the teacher at the beginning of each semester and announced in the usual manner.
Eligibility for participation	Basic knowledge of remote sensing and analysis of satellite images and experience in using a script-based programming language at bachelor's level is required, as well as the skills to be acquired in the module CMS-TRK-ES4 Environmental and Climate Remote Sensing.
Usability	In the Masters Course Computational Modeling and Simulation, the module is an optional module in the Track Computational Environmental Science and Engineering, to be selected in accordance with Annex 2 to the Specific Examination Regulations. The module cannot be chosen in the Master's Course Computational Modeling and Simulation if this or a module with substantially the same content from a Course with which the entry conditions under § 3 of the Studienordnung have been met has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a complex performance of 80 hours. The language of the exam will be German or English, at the choice of the student.
Credits and marks	The module allows 5 credit points to be obtained. The module score corresponds to the test performance score.
Frequency of the module	The module is offered every summer semester.

Workload	The total workload is 150 hours.
Duration of the module	The module covers 1 semester.