Courses in English
Course Description

Department 08 Geoinformatics

Course title Advanced Remote Sensing Methods

Hours per week (SWS) 4

Number of ECTS credits 5

Course objective After attending this course, students understand the basic methods of classifying remote sensing data. They are capable of addressing the key issues of remote sensing in a wider geoinformation context. They are able to work in a team.

Prerequisites Basic knowledge in statistics
Mathematics: linear algebra, analysis
Programming skills in Matlab


Teaching methods Praktikum; Seminaristischer Unterricht

Assessment methods Mündliche Prüfung

Language of instruction English/German, Teaching materials in English

Name of lecturer Prof. Dr. Peter Krzystek

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Link https://www.geo.hm.edu/kontakt/prof/krzystek/index.de.html

Course content The lecture deals with modern statistical methods as well as approaches for the preprocessing, segmentation, and classification of objects as they find use in pattern recognition and remote sensing. Results from current research projects are included. The content:
linear and non-linear image filters; feature analysis; segmentation approaches (watershed, normalized cut, graph cut, mean shift); classification methods (maximum likelihood, expectation maximization, support vector machines); multi-variate statistics; multiple regression; principal component analysis; discrimination analysis (linear and non-linear)

Remarks