UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Advanced Field and Remote- Sensed Characterization of Rock Fractures in Outcrops

2425-1-124R027

Title

Field and remote-sensing techniques for the advanced characterization of rock fractures in outcrops

Teacher(s)

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Language

English

Short description

A proper characterization of rock fractures is the key to reconstruct the geological evolution and to model the hydro-mechanical behavior of fractured rock masses. Nevertheless, a statistically sound characterization of rock fractures is very difficult to achieve, due to a combination of inherent complexity, scale effects, statistical biases and practical survey difficulties. The fast development of remote-sensing 3D survey techniques (LiDAR and photogrammetry), survey platforms (terrestrial and airborne) and 3D geo-modeling tools (DOM, DFN, DFM, FEM) has opened new and accessible routes towards an improved characterization of rock fractures for geological and engineering

problems. In this course, we will introduce and apply a workflow for the geometrical and mechanical characterization of fractured media to: (i) improve conceptual models in geological and engineering applications; (ii) provide consistent input datasets for 2D and 3D discrete, continuum-based and hybrid numerical models.

Evaluation: NO

CFU / Hours

2 CFU - 18 Hours (12h lecture - 6h laboratory training)

Teaching period

II semester

Sustainable Development Goals