ENV-716

Active Remote Sensing of the Atmosphere

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Cursus	Sem.	Type
Civil & Environmental Engineering		Obl.

Language of teaching	English
Credits	4
Session	
Exam	Multiple
Workload	120h
Hours	**56**
Lecture	28
Exercises	19
Practical work	9
Number of positions	

Frequency

Every 2 years

Remark

Every two years / Next time: Fall 2017. Minimum 5 inscrits

Summary

Provide the students the basics to understand and analyze remotely sensed measurements from active systems like lidar (in particular temperature, humidity, aerosols) and radar (weather and cloud radar, wind profiler).

Content

Optical remote sensing:
1. Structure and composition of the atmosphere
2. Light propagation in the atmosphere
3. Fundamentals of the lidar techniques
4. Atmospheric lidar types
5. Basics of the lidar hardware
6. Long open-path techniques

Microwave remote sensing:
1. Precipitation and cloud microphysics
2. Principle of weather radar
3. Multiparameter weather radar
4. Sources of error
5. Cloud radar
6. Wind profiler

Keywords

LIDAR, RADAR, atmospheric profiling