Active Remote Sensing of the Atmosphere

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Cursus
Génie civil & environnement

Type
Obl.

Sem.

Language
English

Credits
4

Session
Multiple

Exam

Workload
120h

Hours
56

Lecture
28

Exercises
19

Practical work
9

Number of positions
5

Frequency

Every 2 years

Remarque

Every two years / Next time: Fall 2019. 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