Atmospheric boundary layer

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

> **Code:** N9EM06A
> **Open to exchange students:** No

Presentation

Objectives

- Become familiar with the basic concepts used to describe and model the atmospheric boundary layer.
- Be able to extract the essential elements from the reading of scientific documents with a view to practical applications.
- Master the basic analytical developments required for a physical understanding of the phenomena studied.
- Take ownership of the subject by carrying out projects.

Description

Pedagogical principles:

- Self-study from a corpus of resources
- Project work with homework and BE
- Link between knowledge and business applications
- Three main reading areas:
- Boundary layer in the neutral case: Ekmann spiral, logarithmic law
- Thermal waves and instabilities: relief waves, convection
- Turbulence modeling: TKE closures, Monin-Obukov

Project-based teaching:

- A document synthesis based on two articles
- A calculation code to be developed with production of results

- A written report combining knowledge and case studies

Pre-requisites

- Thermodynamic Basis
- Mechanic Flows Basis