

Lecture Notes on Boundary Layer Meteorology

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Abstract

Notes of Lectures and additional information from books.

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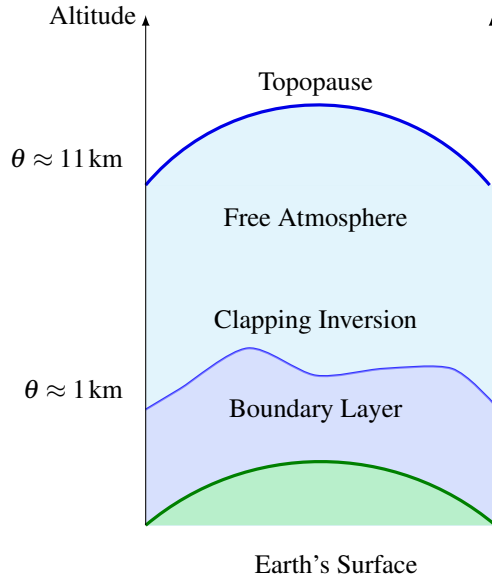
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1. Lecture 1 09/01/2025

1.1 Introduction to Boundary Layer

The Boundary Layer can be defined as part of the troposphere that is directly influenced by the presence of the Earth's surface and responds to surface forcings with a time scale of about an hour or less.



1.2 Boundary layer forcing mechanism

What physical process modify boundary layer air parcel?

1. Heat transfer to/from the ground.
2. Frictional drag.
3. Evaporation/transpiration.
4. Terrain-induced flow modification.
5. Pollution emission.

1.3 Types of air flow or wind

Air flow or wind can be decomposed into following 3 types:

1. Mean wind
2. Turbulence
3. Waves