

Bretheron Lecture Notes

1. Scope of Boundary Layer (BL) Meteorology
2. Turbulent Flow
3. Turbulent fluxes and TKE budgets
4. Boundary Layer Turbulence and Mean Wind Profiles
5. Surface roughness and the logarithmic sublayer
6. Monin-Obukov similarity theory
7. More on BL wind profiles
8. Parameterization of BL Turbulence I
9. Nonlocal Parameterizations for Unsaturated BLs
10. Surface Energy Balance
11. Surface Evaporation
12. The diurnal cycle and the nocturnal BL (entrainment, inertial oscillation)
13. The stable BL
14. Marine and cloud-topped boundary layers
15. Cloud-topped mixed layers I
16. Cloud-topped mixed layers II
17. Dynamics of shallow cumulus boundary layers

Errors:

p 6.4: Eq (3) and eq. above it.

p 5.1.2 (Lect 9): $w_t = \text{Pr}\{\dots\}^{(1/3)}$

p 10.7: should be $A * \exp(-z/D)$...