



The structure of small-scale atmospheric turbulence

S. Cheinet

Institute of Saint-Louis (ISL) , Saint-Louis, France (cheinet@isl.tm.fr)

The structure of small-scale atmospheric turbulence is of great importance to many applications, e.g. acoustical and optical sensing, atmospheric remote sensing by acoustic or electro-magnetic sensors, etc. The presentation introduces the basis of using LES for documenting this structure, and discusses the results in the case of a clear convective boundary layer. It shows that the driving by buoyant ascending plumes challenges a number of standard thoughts on the statistics of small-scale dissipation rates and structure parameters, with implications on similarity laws. Implications for the remote sensing of atmospheric properties are discussed, including scintillometry, sodars and radars.