



Radiation fogs at two experimental sites in Europe: CIBA (Spain) and CESAR/Cabauw (The Netherlands)

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Fogs are weather phenomena that affect the safety of transportation over land, air and sea many days per year over several regions in Europe. Among the different types of fogs, radiation fogs are rather recurrent over some regions where the cooling near the surface is important and common during nighttime, especially in autumn and winter. In this work, a deep observational analysis of a set of days with radiation fogs occurred during the last years has been performed from data provided by several meteorological instruments installed at the Research Centre for the Lower Atmosphere (CIBA, Spain) and at the Cabauw Experimental Site for Atmospheric Research (CESAR, The Netherlands). The physical processes governing the life cycle have been studied in a statistical robust sense and through the detailed analysis of case studies. The most appropriate values of several meteorological variables for fog formation/dissipation are studied at two different locations, including turbulent parameters (turbulent kinetic energy, sensible and latent heat fluxes) and stability conditions (Richardson number), in an attempt to determine the role of turbulence in the formation and dissipation of radiation fogs.