



Observations of marine decoupled boundary layer during the ICOS campaign at the GAW Mace Head station, Ireland.

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The planetary boundary layer (PBL) top height detections have been retrieved by two ceilometers (Vaisala CL31 and Jenoptik CHM15K) and a microwave radiometer (RPG-HATPRO) based at the Mace Head Research station, Ireland, from the 8th to the 28th of June 2009 during the ICOS Mace Head campaign. Characteristic of this region, with warm waters, the marine boundary layer is typically 2-layered with a surface mixed layer (SML) and a decoupled residual or convective layer (DRCL), above which is the free troposphere (Kunz et al. 2002). The PBL data have been analyzed using a newly developed Temporal Height-Tracking (THT) algorithm (Martucci et al., 2010) for automatic detection of the independent SML and DRCL tops. Daily and weekly averages of the PBL data have been performed to smooth out the short term variability and assess the dependence of the PBL depth on different air masses advected over the Mace Head station. Moreover, a qualitative comparison between the ceilometer and radiometer PBL top detected values has been done to assess their consistency.