



## **Three years after DEEPWAVE: Lessons learned from ground-based middle-atmosphere lidar observations**

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The DEEPWAVE field experiment was designed to study and quantify gravity wave dynamics from ground level up to 100 km altitude above New Zealand. The main field campaign took place in the time frame May to July 2014, but high cadence ground-based lidar observations continued through November. This large lidar data set makes it possible to study gravity waves in a broader statistical context. In this presentation we combine and compare the DEEPWAVE observations with another large lidar data set acquired during the GW-LCYCLE2 field campaign in Northern Scandinavia. We examine and try to provide answers to following main questions: What is the average gravity wave background and how can we define and identify singular gravity wave events? What is the intermittency of these events? Are singular gravity wave events causative for times with high gravity wave activity, or rather enhanced amplitudes of multiple superposed gravity wave packets? And finally, is the observed intermittency and evolution of gravity wave events well represented in state of the art numerical models (ECMWF, NAVGEM)?