Project: 1002 Project title: Forcing in the long-wave spectrum due to aerosol-cloud interactions: satellite and climate modelling vs. HALO (FLASH) Project lead: Johannes Quaas Report period: 1.7.2018 – 30.6.2019

In the reporting period, we carried out preliminary assessments of the ICON-NWP with the satellite observations within FLASH. The geographical distribution of the cloud field simulated with ICON-NWP at different resolutions matches approximately the satellite-derived distribution (Fig. 1). This is contrast to the ICON-LEM simulation in the HD(CP)² project, which did not simulate appropriate clouds below the A-Train satellite track (black line in Fig. 1).

A more detailed microphysical assessment of the ice clouds in the ICON-NWP is subject of the next proposal for Project 1002.



Fig. 1: Preliminary omparison of the cloud ice water content from the Meteosat satellite (top) to the ICON NWP model at three different resolutions from coarser (lower right) to higher resolutions (lower left). The case study of 4 July 2014 is shown, for which also simulations with the ICON-LEM exist from the HD(CP)² model. However, the LEM did perform worse than the