Anmeldung eines Themas für ein/e

Forschungsseminar **(x)**
Methodenseminar **(x)**
Masterarbeit **(x)** (bitte eines oder mehrere ankreuzen)

Thema Datum	Life time and horizontal size distribution of warm low-level clouds from ICON model observations 24 August 2020
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Kurzbeschreibung:	Convection permitting simulations are performed for the tropical Atlantic region centered around Canary Islands using the ICOsahedral Non-hydrostatic (ICON) model (Zängl et al., 2015). The data with kilometer-scale resolution can be used to track individual clouds, e.g. by means of Particle Image Velocimetry (Adrian and Westerweel, 2011), and to derive trajectories of individual clouds. The scope of this work is to perform a statistical analysis of (i) the life time of low-level warm clouds and (ii) their horizontal size distribution. The analysis directly connects to results derived from geostationary observations. Within the master thesis techniques will be learned to explore the abundance of data with modern methods. Preexisting Matlab skills are recommended as the work employs the MatPIV toolbox (Sveen, 2004) but they are not explicitly required.
Literatur:	Adrian and Westerweel (2011), Particle Image Velocimetry, Cambridge University Press. Sveen, J.K.. An introduction to MatPIV v. 1.6.1. eprint series, Dept. of Math. University of Oslo, Mechanics and Applied Mathematics, No. 2, ISSN 0809-4403, August 2004. Günther Zängl, Daniel Reinert, Pilar Rípodas, Michael Baldauf: The ICON (ICOsahedral Non- hydrostatic) modelling framework of DWD and MPI- M: Description of the non- hydrostatic dynamical core. In: Quarterly Journal of the Royal Meteorology Society 141, 2015, ISSN 0035-9009, S. 563–579