Announcement of a topic for:

Seminar Research   **X**
Seminar Methods   **X**
Master Theses   **X**   (please mark one or more)

Topic	Improved characterisation of cloud evolution over Europe from tracking in high-resolution SEVIRI data?
Release Date	15 July 2024
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Description:	Regular SEVIRI observations and inferred cloud products feature a spatio-temporal resolution of 3 by 3 km^2 at nadir and 15 minutes. Recently, Deneke et al. (2021) have presented a method for inferring cloud physical properties also from better resolved (1 by 1 km^2 at nadir and 5 minutes) observations of the high-resolution visible channel. The aim of this work is to apply the cloud-tracking methodology of Seelig et al. (2021) to regular and high-resolution SEVIRI cloud products over Europe for an improved characterization of cloud development and to assess the advantage gained from better spatio-temporal resolution oft he observations. The work requires programming skills (available code is in MATLAB) for processing large amounts of data on the LIM cluster.
Literature:	Deneke, H., Barrientos-Velasco, C., Bley, S., Hünerbein, A., Lenk, S., Macke, A., Meirink, J. F., Schroedter-Homscheidt, M., Senf, F., Wang, P., Werner, F., and Witthuhn, J.: Increasing the spatial resolution of cloud property retrievals from Meteosat SEVIRI by use of its high-resolution visible channel: implementation and examples, Atmos. Meas. Tech., 14, https://doi.org/10.5194/amt-14-5107-2021, 2021. Seelig, T., Deneke, H., Quaas, J., and Tesche, M.: Life cycle of shallow marine cumulus clouds from geostationary satellite observations, J. Geophys. Res., 126, https://doi.org/10.1029/2021JD035577, 2021.