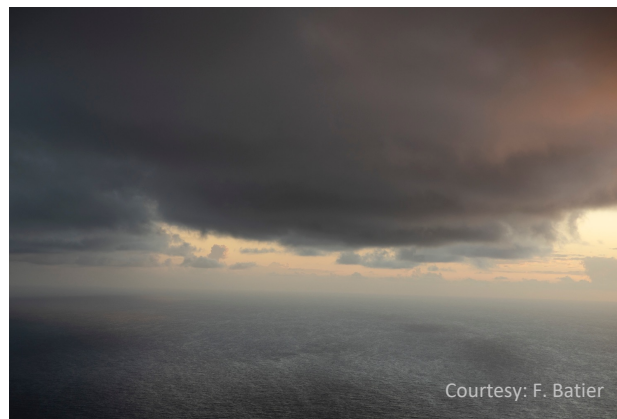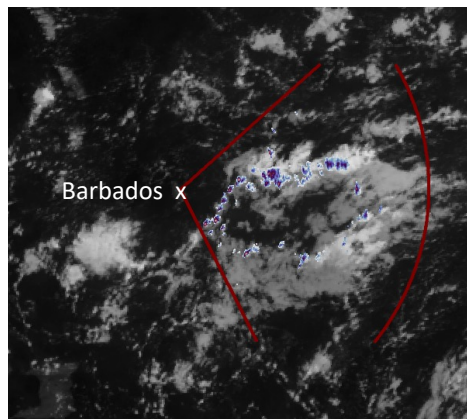# On the relationship between precipitation and the spatial structure in trade wind convection

Jule Radtke[*1,2,] Ann Kristin Naumann[1,2], Raphaela Vogel[1], Felix Ament[1], Martin Hagen[3]

[1]UHH , [2]MPI-M, [3]DLR

(*jule.radtke@uni-hamburg.de)
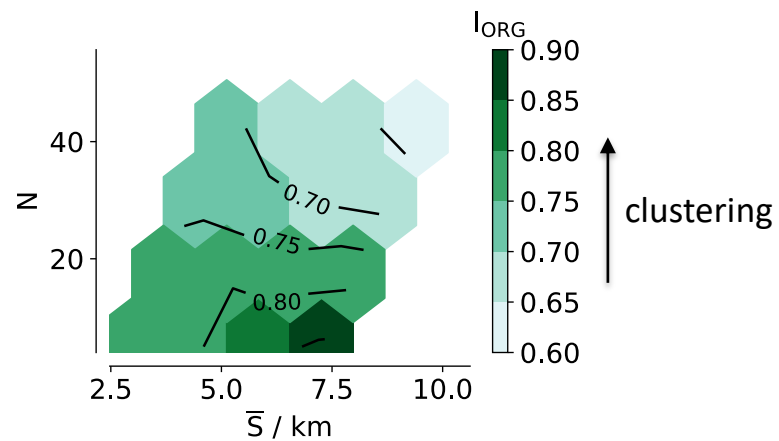
Barbados x

Courtesy: F. Batier

How are precipitation characteristics in the trades associated with clustering?

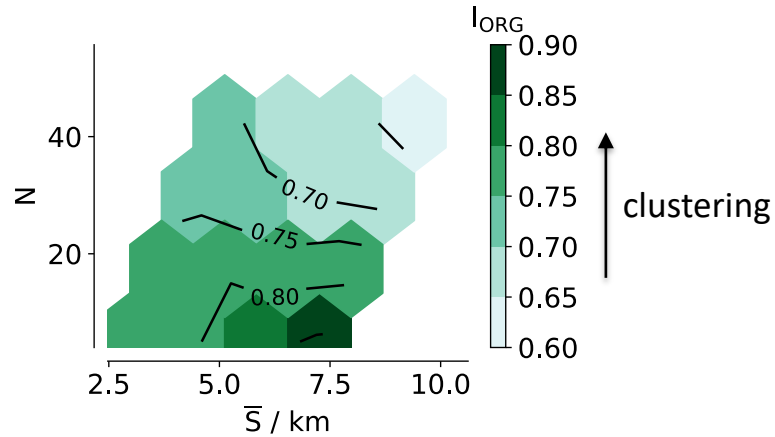Radtke et al. (2022): The relationship between precipitation and its spatial pattern in the trades observed during EUREC4A, QJRMS, https://doi.org/10.1002/qj.4284

Data: EUREC[4]A campaign (Stevens et al. 2020) **- C-band radar PoldiRad** (Hagen et al., 2021)
Jan-Feb 2020 near Barbados

radar reflectivity ⟶ rain rate + convective cells

mean rain rate **P**

rain Intensity **I**
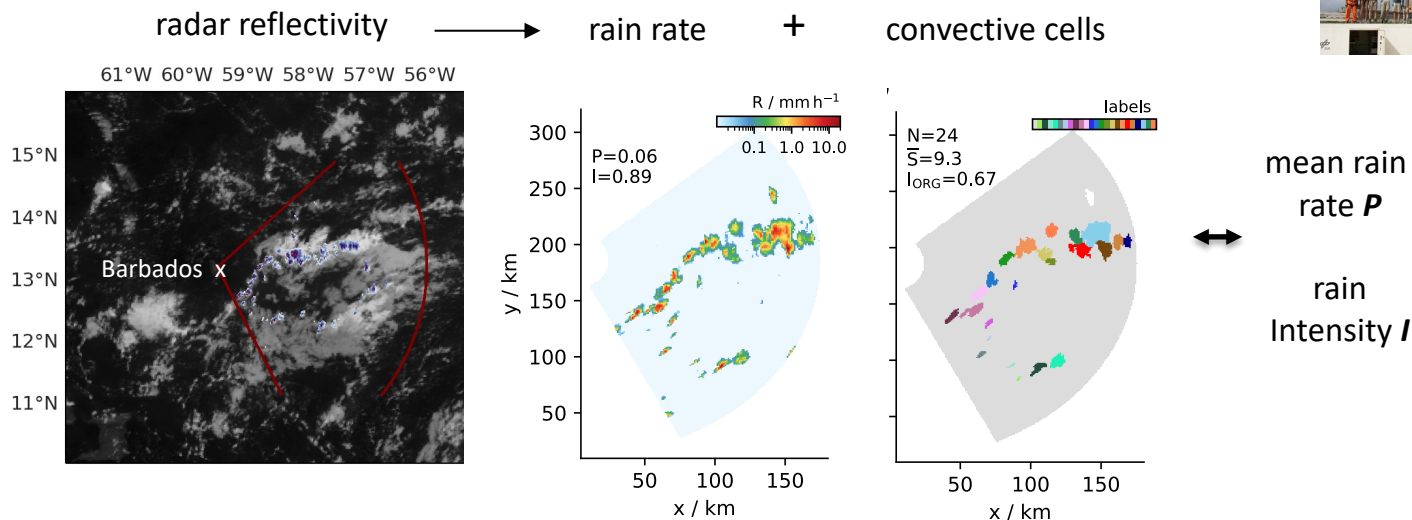
Precipitation is almost always associated with clustering
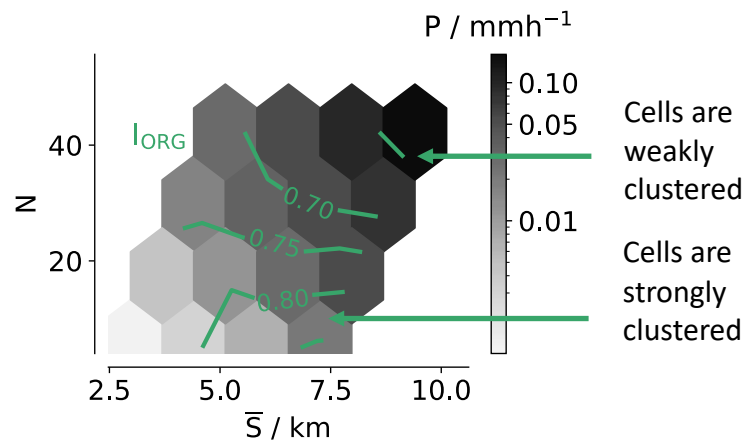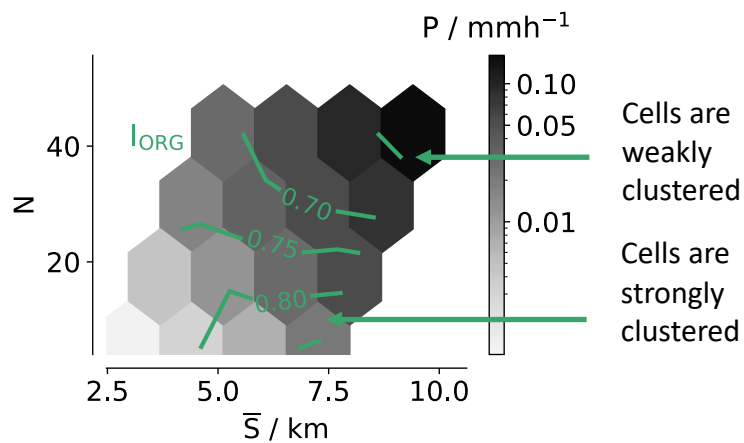
... is typically highest where there are few and large cells - similar to deep convection (Brueck et al., 2020, Retsch et al., 2020)
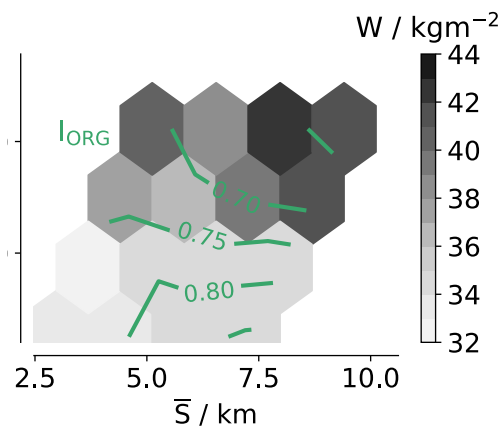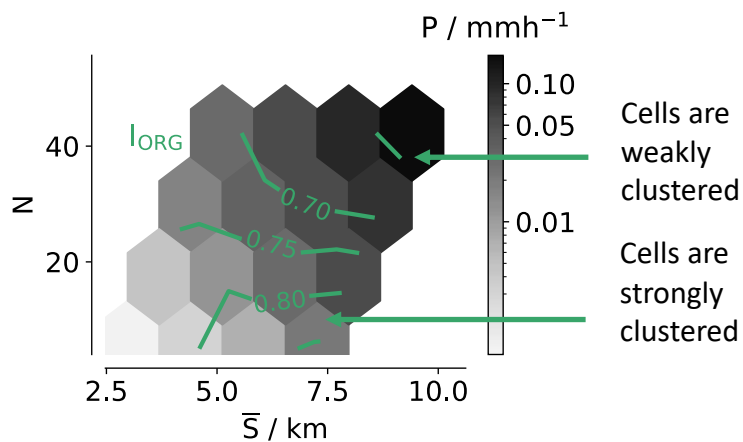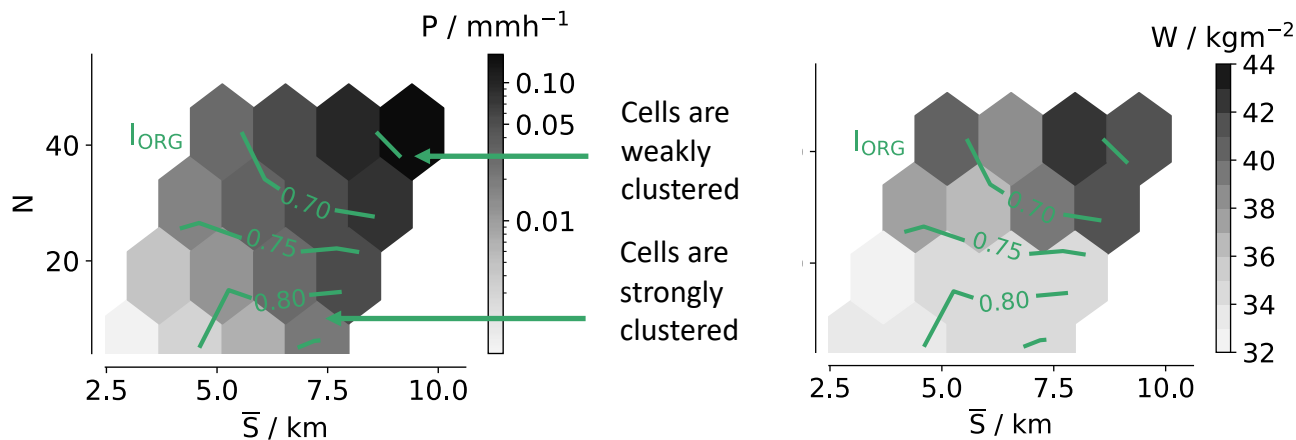
the cells' *degree* of clustering

Precipitation characteristics vary largely independent of the cells' *degree* of clustering

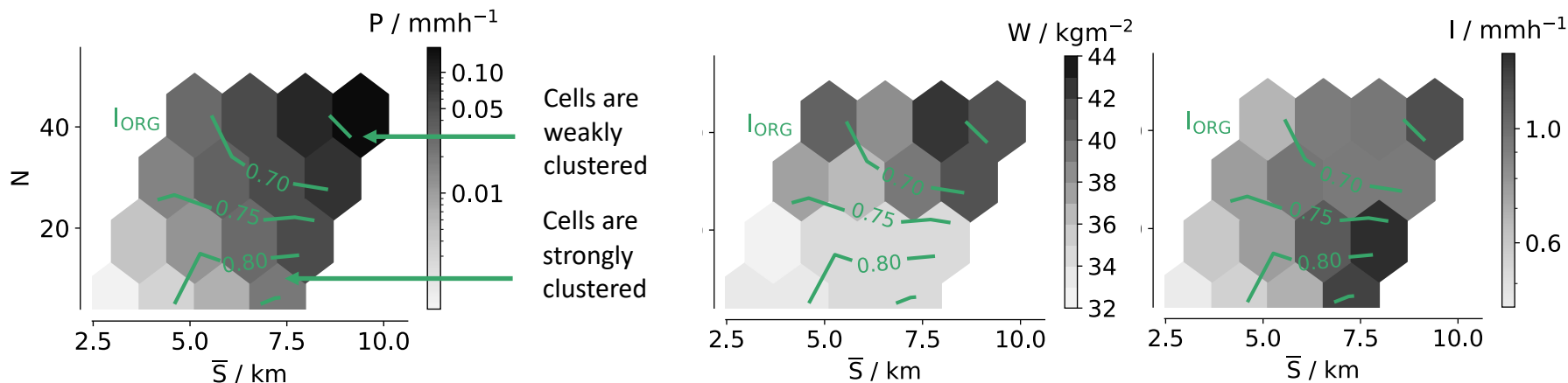# Precipitation characteristics vary largely independent of the cells' *degree* of clustering

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… and for high rain intensities

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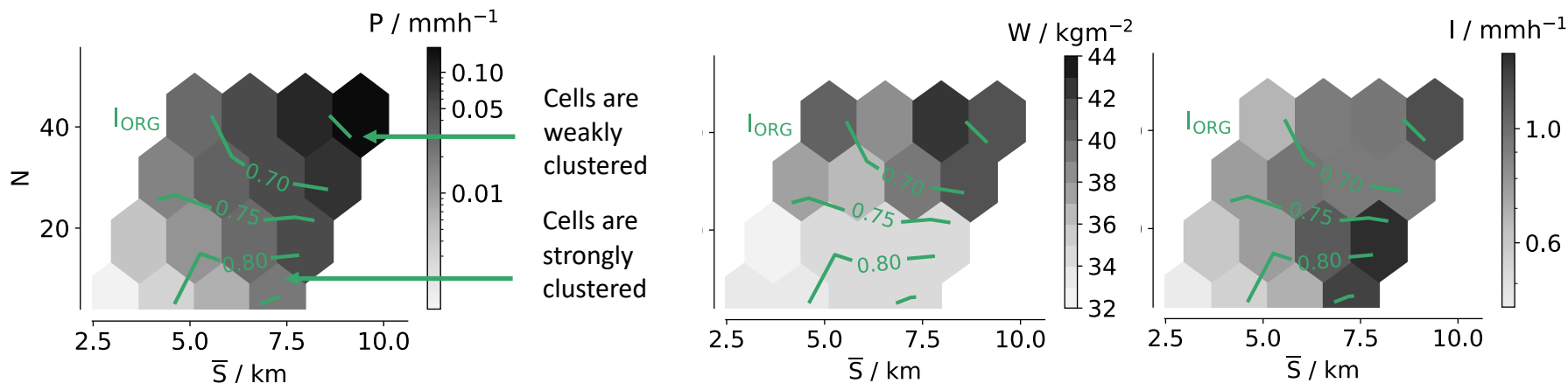… but it could be important to maintain precipitation in dry environments

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Thank you!