Demystifying fog microphysics

A high-resolution Large-Eddy Simulation study with coupled particle based microphysics

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Few activated CCN

Many activated CCN

Longwave cooling rate

Sedimentation rate



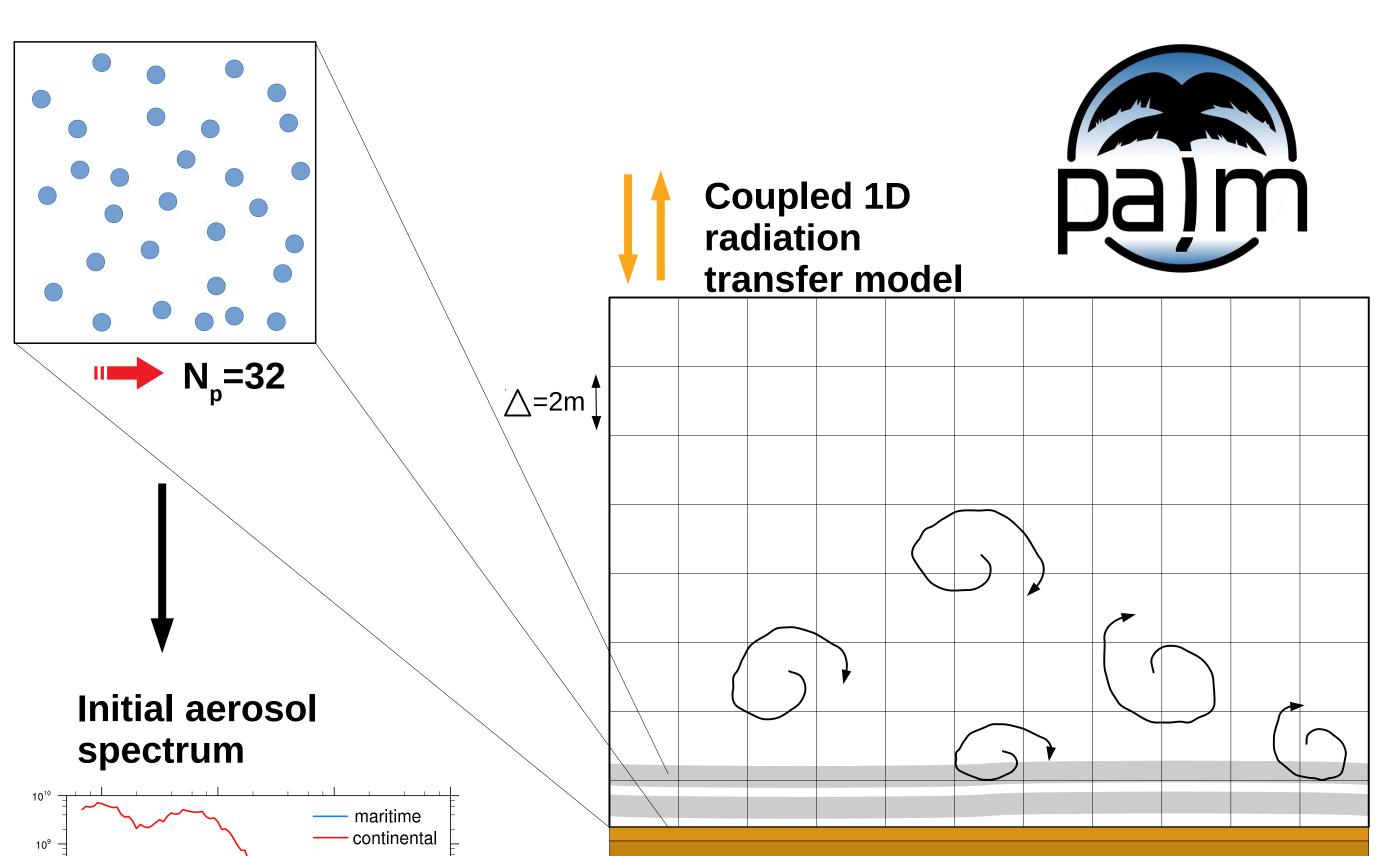
1. Objective

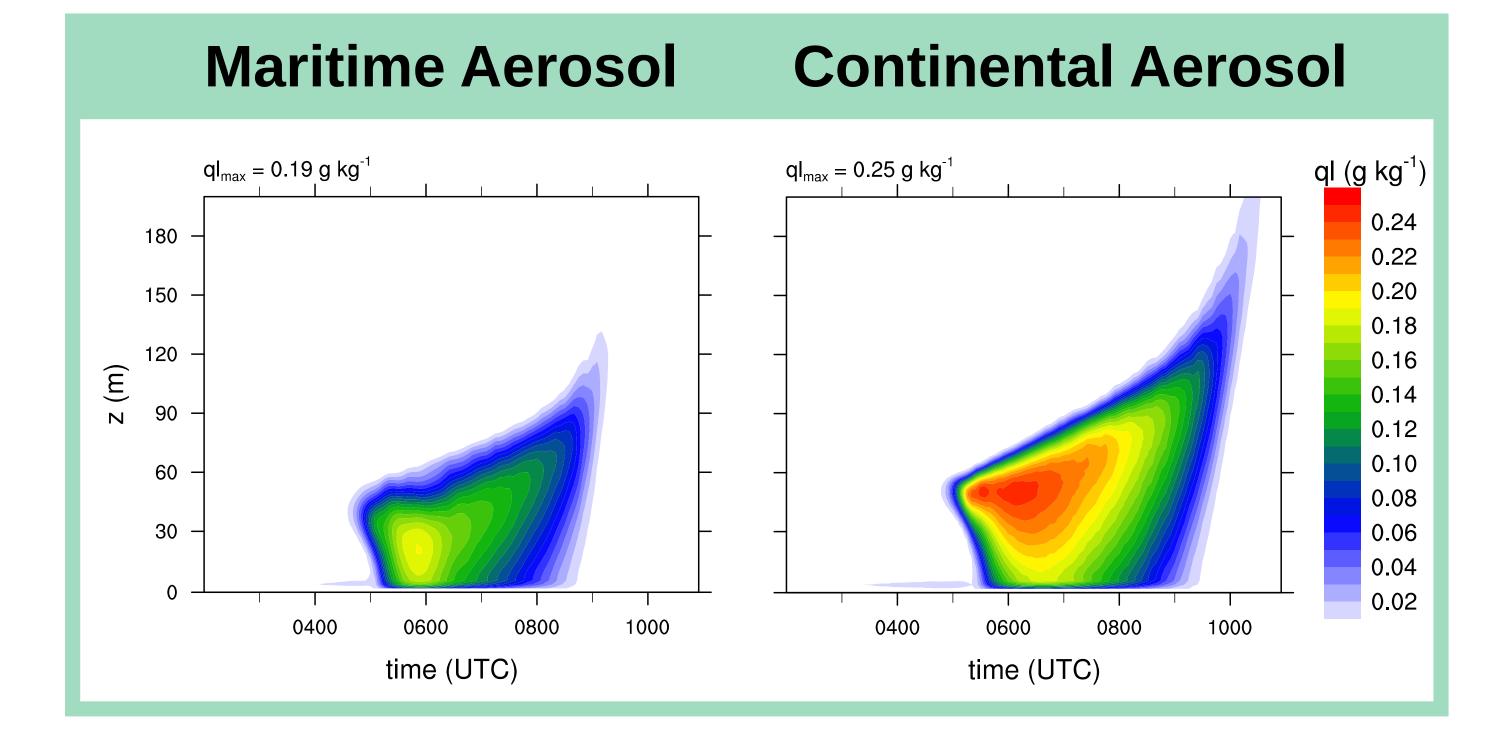


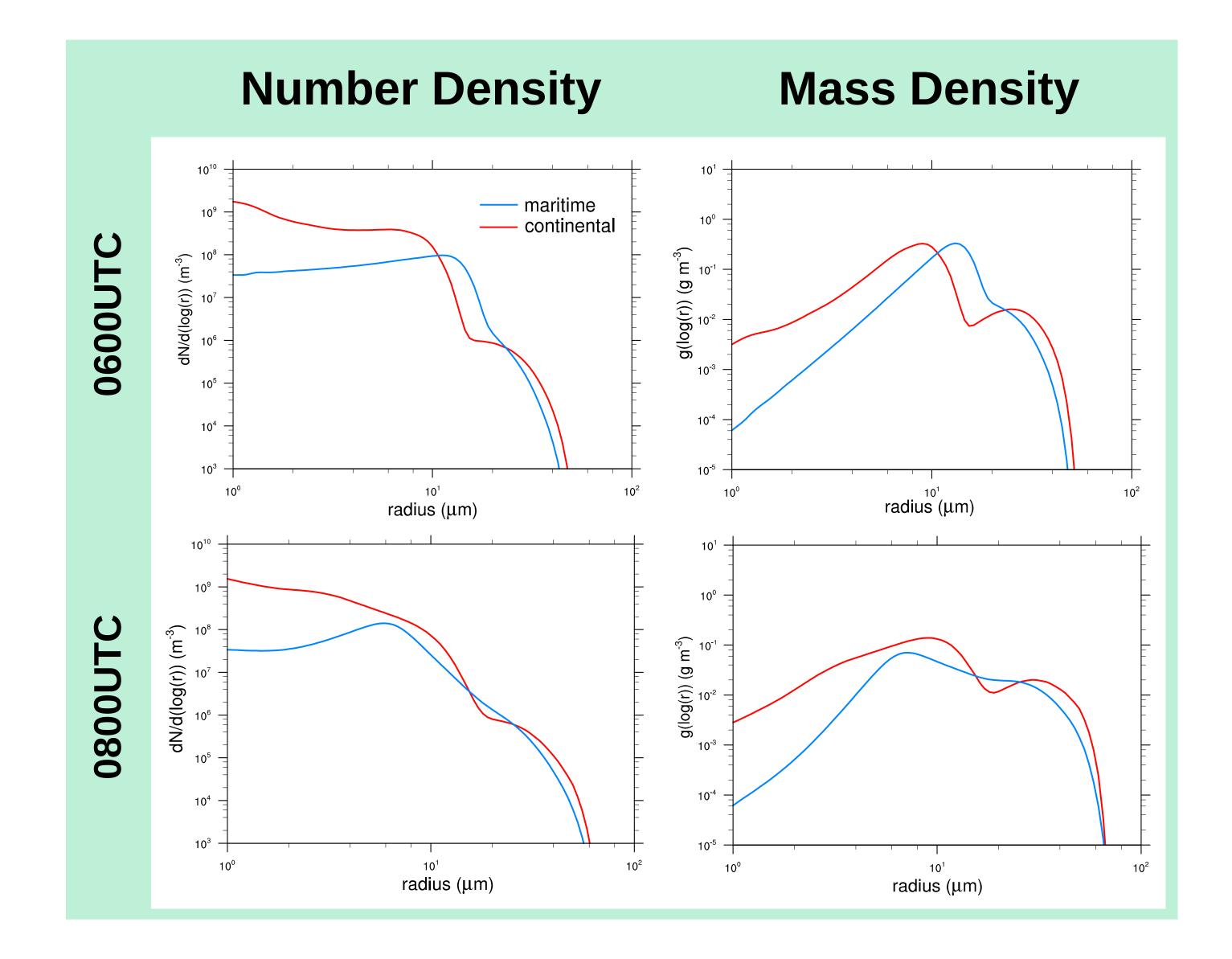
What is the impact on explicit consideration of aersol properties for fog?

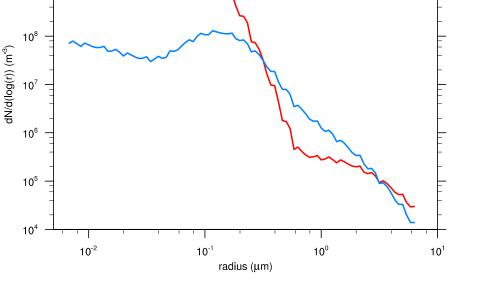
How does radiation fog spectra look like?











Coupled interactive land surface model

4. To Discuss ...

33.00

6.00

3.00

0.00

Problem: Sedimentation leads to too strong superdroplet removal

Absorbing

180

150

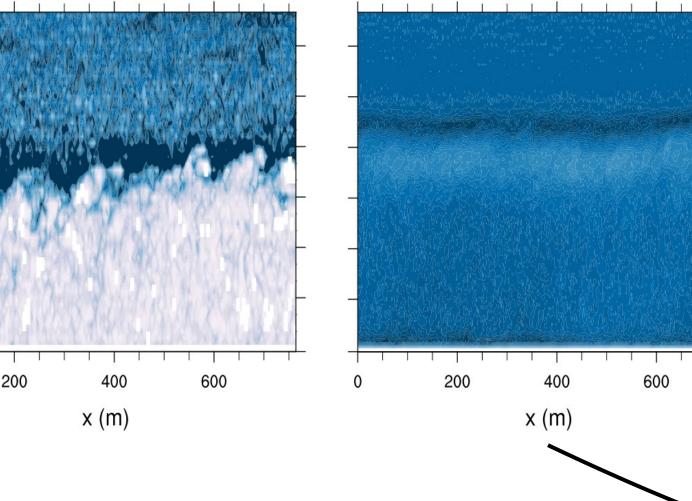
120

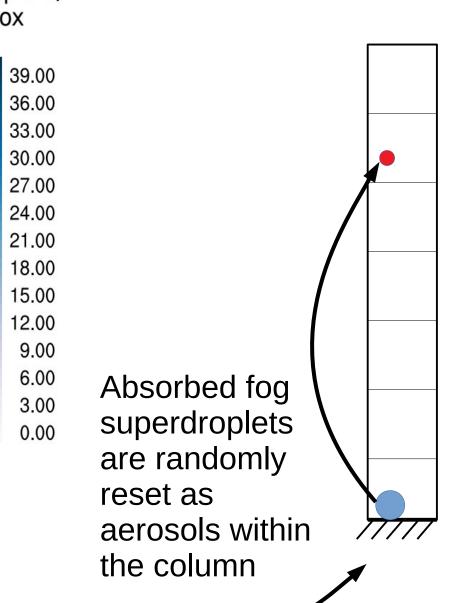
60

30

z (m)

superdroplets/ **Reset method** grid box





5. Take home

First time simulating fog with 3D-LES and coupled LCM Droplet spectra show bimodal behaviour Method to ensure appropriate superdroplet concentration (e.g. Reset method) must be applied.

Contact

Please do stop me if you see me in the hallway. I'd love to adress any questions or comments!

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Schwenkel and Maronga, 2019

Workshop on Eulerian vs. Lagrangian methods for cloud microphysics, Cracow, Poland