Beitrag ID: **24** Typ: **Talk**

# High-Order Methods for Wetting and Dewetting Phenomena on Soft and Rigid Substrates including Heat transfer

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We are going to present a numerical method which combines the fluid-structure-interaction solver for simulating the wetting of solid substrates, developed in the first funding period of the priority programme with a solver for heat transfer and evaporation. This solver is based on the highly accurate Extended Discontinuous Galerkin discretization, to achieve a highly accurate spatial discretization. Both, the fluid as well as the solid phase are modelled in a Eulerian frame, which enables a monolithic solver design, where all phases are discretized on the same mesh.
Preliminary results demonstrate the method's ability to capture interactions between levitating droplets (Leidenfrost effect) and soft substrates. Furthermore, we are going to present current progress regarding the fluid-structure interaction solver, e.g., with respect to validation and verification of the physical modelling.

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**Sitzung Einordnung:** Short Talks