

## Wetting dynamics during drop impact on hot plates

***Dr. Kirsten Harth***

*Physics of Fluids  
University of Twente  
Enschede, The Netherlands*



The Leidenfrost phenomenon, where an evaporating drop levitates above a layer of its vapour on sufficiently hot plates is well-known for gently deposited drops. For impacting drops, the additional impact pressure can cause much thinner vapour layers in the nanometer range, and in contrast to boiling liquid pools the heat transfer and liquid flow are highly dynamic. However, understanding the conditions and extent of substrate contact is crucial in many applications that rely either on good heat transfer during e.g. cooling a substrate, or droplet removal. Conventional side or bottom view imaging is incapable of detecting such substrate contacts.

High-speed total internal reflection imaging reveals an intriguing complex structure of transient wetting patterns during the spreading and receding of such drops. The talk will introduce general aspects of the boiling regimes and focus on transient, wave-like pattern formation. Finally, we will extend to solidification experiments and other measurement techniques.

**Wednesday, May 23<sup>rd</sup>, 2018 at 2:15 pm**

**MPIDS, Prandtl lecture hall, building AI,  
Am Faßberg 11, Göttingen**

**Max Planck Institute for Dynamics and Self-Organization  
Dynamics of complex fluids - Nonequilibrium soft matter group**

**Dr. Marco Mazza**

Email: marco.mazza@ds.mpg.de, Phone: +49-(0)551/5176-233

Am Faßberg 17, 37077 Göttingen, Germany