

# MPIDS Colloquium



MAX-PLANCK-GESELLSCHAFT

## The "missing link" in planet formation

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The formation of planets is a multi-scale and multi-stage problem. It is known that planets form out of (sub-)micrometer-sized protoplanetary dust particles that condense in cooling protoplanetary disks. These dust particles then collide among each other, which initially leads to the formation of loose aggregates. However, laboratory experiments have shown that this growth stops when the aggregates have reached sizes of a few millimeters. Many theoretical concepts have been advocated to explain the further growth towards (multi-)kilometer objects. Bodies exceeding these sizes possess sufficiently strong gravitational attraction to accumulate mass in high-velocity mutual collisions. Owing to the great success of the Rosetta mission to comet 67P/Churyumov-Gerasimenko, we could show that comet 67P consists of mm-sized dust aggregates, which means that it could only be formed by a smooth gravitational collapse. Thus, we now have empirical evidence that the "missing link" in planet formation has been found.

**Wednesday, November 01<sup>st</sup>, 2017 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**

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