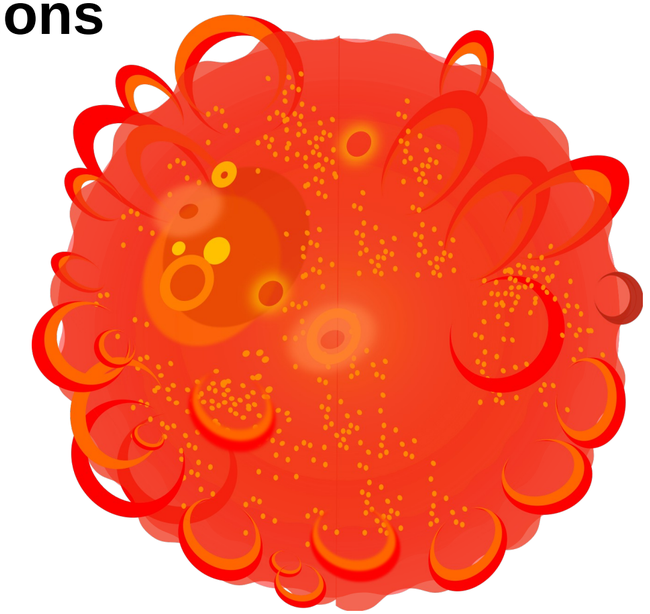
# Graduate Research Training Group

INSTITUT FÜR PHYSIK

**7th November 2024, 15:00 in HS1**
**Samuel Schumacher**
**High Energy Density Physics, Energy Transport Mechanisms**

## Measuring the opacity of hydrogen at stellar interior conditions using the National Ignition Facility



Red dwarf stars, the most common type of star in the universe, offer unique insights into stellar evolution and high energy density physics. To better understand the conditions within these stars, we are conducting laboratory experiments to replicate their extreme interiors, focusing on studying the mechanisms that influence energy transport—e.g. how energy is absorbed and hindered through plasma. Using the National Ignition Facility's high-energy capabilities, we created similar temperatures and pressures, providing the very first benchmark measurement of opacity models at these extreme conditions. This research seeks to enhance our understanding of red dwarf interiors and ultimately will improve models of stellar structure.

**Talk and slide language:** English **Location:** Great Lecture Hall, HS1, Institute for Physics, Albert-Einstein Str. 24

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