## Hungarian-German WE-Heraeus Seminar



Contribution ID: 51

Type: not specified

## Warm dense matter at the HIBEF

Wednesday 25 June 2025 09:00 (40 minutes)

The Helmholtz International Beamline for Extreme Fields (HIBEF) at the High Energy Density (HED) instrument of the European XFEL combines high-intensity fs-pulse lasers, and high energy ns-pulse lasers, with hard x-rays having exceptional spectral brilliance. This enables a wide spectrum of research into HED physics, strong-field QED, warm dense matter (WDM) and new high pressure phases of materials. This talk will provide an overview of the first 5 years of operation of HED/HIBEF, and highlight some of the outstanding results, including first direct measurement of the liquid structure of carbon, resonant probing of WDM heating by imaging bound-bound transitions in single high charge states, and a new mechanism of cylindrical ablative compression to 10x solid density using J-class short pulse lasers versus kJ-class ns-pulse shock compression.

**Primary author:** Prof. COWAN, Thomas (Helmholtz-Zentrum Dresden-Rossendorf) **Presenter:** Prof. COWAN, Thomas (Helmholtz-Zentrum Dresden-Rossendorf)