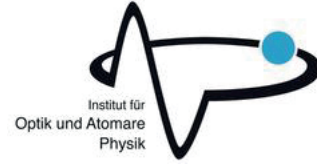
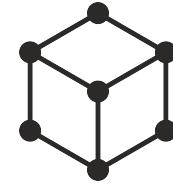


Physikalisches Kolloquium



Prof. David Burgess

Queen Mary College London

“Cosmical Shock Waves”

Shock waves arise when very fast flows interact and they are seen throughout the Universe, from cosmological scales in galactic clusters to violent super novae while in the solar system plasma shocks can be observed in fine detail from the solar wind interacting with planets and small bodies to the boundary of the heliosphere and interstellar medium.

Shock waves form nonlinear fluid discontinuities in which dissipation allows a transition from supersonic to subsonic flows via heating. Since astrophysical flows are usually collisionless, heating requires particle interaction with waves and turbulence. As a result a fraction of ions and electrons is accelerated to high energies, cosmic rays are formed and emissions are driven which allow us to remotely image astrophysical systems.

This talk introduces astrophysical shock wave observations and the state of their investigation including advanced numerical simulations.

Thursday, 23.05.19 · 16:15h · EW 202

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