

## GASTVORTRAG

Die Arbeitsgruppe Applied Mathematics lädt zu folgendem Vortrag ein:

**Prof. Dr. Herbert Egger**

Darmstadt University of Technology

### Variational Methods for Radiative Transfer

The radiative transfer equation describes the propagation, absorption and scattering of electromagnetic radiation traversing a background medium. It is an integro-partial differential equation in six dimensional phase space governing the evolution of the spectral radiance. Similar mathematical models also arise in neutron transport or linearized particle dynamics.

In this talk, we present a variational framework for radiative transfer that allows a rigorous analysis of the problem and a systematic discretization by Galerkin methods. Existence and uniqueness of solutions on the continuous and discrete level is obtained in the framework of mixed variational problems.

We discuss in detail the stationary problem and briefly comment on the generalization to instationary problems. In addition, we present results obtained with a particular discretization based on a truncated spherical harmonics expansion and mixed finite element methods.

Zeit: **Dienstag, den 31. Juli 2018 um 16.15 Uhr**

Ort: **Bauing.-Gebäude, Technikerstraße 13, 7. Stock, Seminarraum 734**

Gäste sind herzlich willkommen!

*Markus Haltmeier*