



Seminar of the Work Group
Nonlinear Partial Differential Equations
WS 21/22

Speaker: Prof. Alessia Nota
February 1st, 2022, 14:00 - 15:00
Zoom Link: <https://kit-lecture.zoom.us/j/5732649920>
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Homoenergetic solutions of the Boltzmann equation

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Abstract

In this talk, I will consider a particular class of solutions of the Boltzmann equation, known as homoenergetic solutions, which were introduced by Galkin and Truesdell in the 1960s. These are a particular type of non-equilibrium solutions of the Boltzmann equation and they are useful to describe the dynamics of Boltzmann gases under shear, expansion or compression. Due to the fact that these solutions describe far-from-equilibrium phenomena their long-time asymptotics cannot always be described by Maxwellian distributions. I will discuss different possible long-time asymptotics of homoenergetic solutions of the Boltzmann equation, as well as some conjectures and open problems in this direction. These are joint works with A.V. Bobylev, R.D. James and J.J.L. Velázquez.