

EINLADUNG

zum

HABILITATIONSVORTRAG

Dr. Konstantinos Kalimeris

(Department of Applied Mathematics and Theoretical Physics,
University of Cambridge)

“Asymptotic methods on fluid dynamics”

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Abstract:

Asymptotic methods have a long and illustrious history in a plethora of categories both in pure and applied mathematics.

The theoretical tools of asymptotic analysis provide the appropriate background for the development of methods for studying problems originated from the real world; furthermore, these methods find several applications in physical problems.

In this talk the emphasis is given more to the latter part: we discuss asymptotic methods and their application to partial differential equations which model certain problems of fluid dynamics and are analysed in the work of my habilitation thesis. First, we use techniques from asymptotic and perturbation theory to obtain approximate analytical and numerical solutions of a non-linear boundary value problem which comes from the Euler's equations for fluids and describes two dimensional water waves travelling at constant speed. Second, we derive a non-local formulation for a more general modelling of water waves, including waves with moving boundaries which are related with the study of tsunamis; we present the results that the above techniques produce for particular cases of this problem.

**Mittwoch, 11. April 2018,
15:00 Uhr – 15:45 Uhr,**

**Fakultät für Mathematik,
SR 16, 3. OG.
Oskar-Morgenstern-Platz 1
1090 Wien**

Otmar Scherzer
Christian Krattenthaler