

EINLADUNG

zu

einem didaktischen Vortrag

im Rahmen der Habilitation von

DI Mag. Dr. Dietmar Ölz

(School of Mathematics and Physics, University of Queensland)

“Multiple scale expansion”

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The multiple scale expansion is a fairly general method used to obtain approximate solutions of differential equations by introducing additional independent variables (see Mark Holmes: Perturbation Methods, 2013).

Using the example of the harmonic oscillator with small damping ϵ illustrate the appearance of a so called secular term in the regular expansion of the solution. This term introduces a large approximation error as soon as time $\sim 1/(\text{scale of the damping term})$.

The multiple scale method is then introduced in order to avoid this complication and to obtain approximate solutions which are valid on larger periods of time.

**Donnerstag, 14. Dezember 2017,
15:00 Uhr – 16:00 Uhr,**

**Fakultät für Mathematik,
Oskar-Morgenstern-Platz 1,
SR. WPI, 8 OG.**

Christian Schmeiser