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FAKULTÄT FÜR MATHEMATIK
Dekan Univ.-Prof. Dr. Radu Ioan Bot

Einladung zur öffentlichen Defensio von

David Wallauch

Thema der Dissertation
On Optimal Blowup Stability for Nonlinear Wave Equations

Abstract:

Over the last decades, the study of nonlinear dispersive wave equations has received wide interest, not only among analysts, but also physicists. One of the key aspects in the analysis of such equations lies in developing an understanding of singularity formations of solutions and the properties of such singularities. In this talk, I will highlight the key details of my thesis which is concerned with the stability of explicitly known blowup profiles for two different model equations, the corotational wave maps equation and the radial energy critical wave equation with a power nonlinearity. Stability results for these blowups are derived in the optimal regularity class in terms of inhomogeneous L^2 based Sobolev spaces in the backwards lightcone of the singularity. At the heart of these results lie Strichartz estimates for wave equations with potentials in self similar coordinates, the derivation of which is based on a Laplace representation of the associated semigroup and a careful study of the resulting oscillatory integrals.

Prüfungssenat

Univ.-Prof. Mag. Dr. Andreas Cap
(Vorsitz, Universität Wien)

Univ.-Prof. Mag. Dr. Roland Donninger
(Universität Wien)

Prof. Dr. Sebastian Herr
(Universität Bielefeld)

Prof. Dr. Herbert Koch
(Universität Bonn)

Zeit:

Topic: Thesis defense D. Wallauch
Time: Apr 13, 2023 09:30 Vienna

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