

SALZBURG MATHEMATICS COLLOQUIUM

Winter 2022/2023

Xavier Ros-Oton (Barcelona)

„Regularity of interfaces in the Stefan problem“

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Abstract:

The Stefan problem, dating back to the XIXth century, is probably the most classical and important free boundary problem. It describes phase transitions, such as ice melting to water. The regularity of interfaces in the Stefan problem was developed in the groundbreaking paper (Caffarelli, Acta Math. 1977). The main result therein establishes that the free boundary is smooth in space and time, outside a certain set of singular points.

The fine understanding of singularities is of central importance in a number of areas related to nonlinear PDEs and Geometric Analysis. In particular, a major question in such a context is to establish estimates for the size of the singular set. The goal of this talk is to give an overview of this area of research, and present some recent results for the Stefan problem.

Thursday, **15:00-15:45**

Hörsaal 414, 1. Stock