

∫ MATEMATIČNI KOLOKVIJI ∫

On generic melting rates for the Stefan problem

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Stefan problem is one of the oldest free-boundary problems modelling phase transitions between liquids and solids. If, for example, the solid phase melts in finite time - this is an instance of singularity formation in the language of partial differential equations (PDE). If the rate of melting is self-similar we speak of Type I singularity formation.

After a brief introduction to the Stefan problem, I will show that for an open set of radial initial data the melting rate is to the leading order NOT given by the self-similar scaling. It is instead of Type II with rates predicted in the pioneering work of Herrero and Velazquez. Time remaining, I will explain what we expect to happen in non-radial setting. Our techniques rely on ideas from spectral theory, dynamical systems and PDE.



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Vabljeni vsi prijatelji matematike.
Predavanju sledi druženje ob prigrizkih.