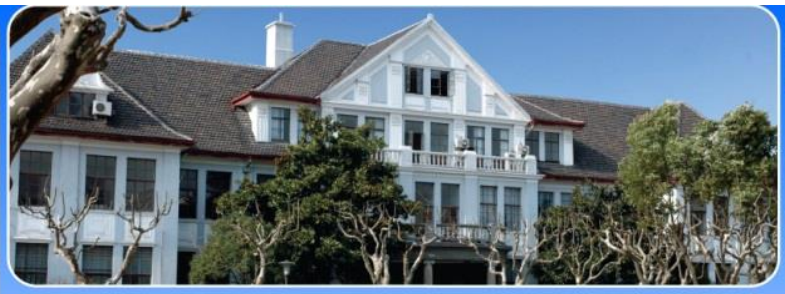


复旦大学数学科学学院
数学综合报告会

报告题目：On a transmission problem for equation and dynamic boundary condition of Cahn-Hilliard type with nonsmooth potentials

报告人：Prof. Takeshi Fukao（Kyoto University of Education, Japan）

报告时间：2019-11-26 星期二 15:30-16:30

报告地点：光华东主楼 2001

摘要：In this talk, we will discuss the well-posedness of the Cahn-Hilliard equation subject to a class of new dynamic boundary conditions. The system was recently derived in Liu-Wu (2019 Arch. Rational Mech. Anal.), via an energetic variational approach and it naturally fulfils three physical constraints such as mass conservation, energy dissipation and force balance. The target problem can be viewed as a transmission problem that consists of Cahn-Hilliard type equations both in the bulk and on the boundary. In our approach, we are able to deal with a general class of potentials with double-well structure, including the physically relevant logarithmic potential and the non-smooth double-obstacle potential. Existence, uniqueness and continuous dependence of global weak solutions are established. The proof is based on a novel time-discretization scheme for the approximation of the continuous problem. Besides, a regularity result is shown with the aim of obtaining a strong solution to the system. This is a joint work with Pierluigi Colli (Pavia, Italy) and Hao Wu (Fudan, China).

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