# Minimizing movement approach using general level set functions for evolving spirals by crystalline curvature flow with driving force

Takeshi Ohtsuka
Gunma University

In this talk we present a numerical method computing evolution of several spirals by crystalline curvature flow with driving force. The crystalline curvature is formally defined as the first variation of an anisotropic arclength functional with $\ell^1$-type singular density function. However, we consider such a singular motion of spirals with a level set method to describe the merging of spirals. Chambolle proposed an algorithm of minimizing movement approach for the mean curvature motion using signed distance function of interface. The aim of this talk is to improve the Chambolle's algorithm for the evolution of spirals, and introduce its iterative scheme by split Bregman iteration due to Oberman-Osher-Takei-Tsai. The crucial issue is that the usual signed distance from the spirals does not work well. To overcome this problem, we improve the Chambolle's algorithm with general level set functions for spirals instead of the signed distance function. This is a joint work with Y.-H. R. Tsai.