Contribution ID: **14** Type: **not specified**

Fractional Allen–Cahn systems with multi-well potential and nonlocal minimal partitions

Tuesday, July 5, 2022 3:00 PM (30 minutes)

The aim of this talk is to present results on the asymptotic analysis of a fractional version of the vectorial Allen–Cahn equation with multiple-well in arbitrary dimension. In contrast to usual Allen–Cahn equations, the Laplace operator is replaced by the fractional Laplacian as defined in Fourier space. Our results concern the singular limit $\varepsilon \to 0$ and show that arbitrary solutions with uniformly bounded energy converge both in the energetic and geometric sense to nonlocal minimal partitions in Ω. The notion of nonlocal minimal partition corresponds to the stationary version of the nonlocal minimizing clusters introduced by M. Colombo & F. Maggi (2017) and A. Cesaroni & M. Novaga (2020), and generalizing the nonlocal minimal surfaces of L. Caffarelli, J.M. Roquejoffre, & O. Savin (2010).

Primary author: GABARD, Thomas (Université Paris-Est Créteil)

Presenter: GABARD, Thomas (Université Paris-Est Créteil)