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Curvature penalization of strongly anisotropic interface models and their phase-field approximation

Tuesday, 8 July 2025 14:00 (1 hour)

In this talk I will present recent results obtained with J.F. Babadjian and B. Buet about the regularizing effects of curvature terms for interface models with strong anisotropy. We will consider two main (related) questions for two types of problems. The questions are lower semi-continuity of the energies and phase-field approximations. The models are isoperimetric problems on the one hand and free discontinuity problems on the other hand. Both are motivated by applications in material sciences. One of the original aspects of our work in the setting of free discontinuity problems, is the treatment of point energies which relies on a Gauss-Bonnet type result for varifolds.

Presenter: Dr GOLDMAN, Michael (CMAP Ecole Polytechnique)