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CMM PDE Seminar

Speaker: Carlos Román, Pontificia Universidad Católica de Chile.

Title: "Domain Branching in Micromagnetism"

Abstract: Nonconvex variational problems regularized by higher order terms have been used to describe many physical systems, including, for example, martensitic phase transformation, micromagnetics, and the Ginzburg--Landau model of nucleation. These problems exhibit microstructure formation, as the coefficient of the higher order term tends to zero. They can be naturally embedded in a whole family of problems of the form: minimize E(u)= S(u)+N(u) over an admissible class of functions u taking only two values, say -1 and 1, with a nonlocal interaction N favoring small-scale phase oscillations, while the interfacial energy S penalizes them. In this talk I will report on joint work with Tobias Ried, in which we establish scaling laws for the global and local energies of minimizers of an energy functional that naturally arises when analyzing the behavior of uniaxial ferromagnets using the Landau-Lifschitz model. These scaling laws strongly suggest that minimizers have a self-similar behavior.

Venue: DIM seminar room, Beauchef 851, 5th floor.
Wednesday, december 18th at 12:10 pm.

Both lectures can be followed through the link.

Zoom:
https://uchile.zoom.us/j/96642349167?pwd=MkRVbWxzOFBUUXlCTWFicW0reWZ6dz09

For further information, see our webpage: https://eventos.cmm.uchile.cl/pdeseminar/