

# A fractional framework for perimeters and phase transitions

Prof. Dr. Enrico Valdinoci (Università Milano, Italy)

I will introduce the notion of fractional minimal surfaces, that are surfaces that minimize a nonlocal functional of perimeter type. These objects arise in the study of a nonlocal Allen-Cahn equation in which some long-range interaction may contribute to the phase transition. I would like to present some results concerning regularity,  $\Gamma$ -convergence and density estimates and to discuss some open problems.