

# First Joint Meeting Brazil Italy of Mathematics

## Special Session: Elliptic PDEs

Rio de Janeiro, August 29 - September 02, 2016

**Title:** Interior and boundary properties of nonlocal minimal surfaces

**Authors:** Enrico Valdinoci

**Abstract:** We consider a geometric variational problem driven by the minimization of a nonlocal perimeter functional. The surfaces obtained in this way arise as limit interfaces of long-range phase transitions and find natural applications, for instance, in image processing and geometric motions.

Some interior regularity results will be presented, together with quantitative flatness and energy estimates that are valid for minimizers and, more generally, for stable solutions.

We also discuss the (quite unexpected) boundary behavior of these nonlocal minimal surfaces.

These results were obtained in collaboration with Luis Caffarelli, Eleonora Cinti, Serena Dipierro, Alessio Figalli, Ovidiu Savin and Joaquim Serra.