

Topological singularities in periodic media: Ginzburg-Landau and core-radius approaches

Roberto Alicandro

Università di Cassino e del Lazio meridionale

r.alicandro@unicas.it

Andrea Braides

Università di Roma 'Tor Vergata'

braides@mat.uniroma2.it

Marco Cicalese

Technische Universität München

cicalese@ma.tum.de

Lucia De Luca

Istituto per le Applicazioni del Calcolo "M. Picone", IAC-CNR

lucia.deluca@cnr.it

Andrey Piatnitski

The Arctic University of Norway

apiatni@iitp.ru

I will describe the emergence of topological singularities in periodic media within the Ginzburg-Landau model and the core-radius approach. In particular I will investigate, through a multi-scale analysis, the interaction between the oscillation period of the composite and the length scale parameter of the Ginzburg-Landau functionals.