Seminar/Talk

Discrete-to-continuum limits of edge dislocations in 2D

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Host: Jan Maas

The starting point is a 2D model for the dynamics of n dislocations, which are modelled as point particles with a positive or negative 'charge'. In the celebrated engineering paper by Groma and Balogh in 1999, the limit passage of these dislocation dynamics is performed in a statistical mechanics framework, which relies on a phenomenological closure assumption. In my talk, I present how to pass rigorously to the limit by using the theory of Wasserstein gradient ows and using advanced functional analysis on the weak form of the evolution equation. Interestingly, our conclusion for the limiting dynamics of the dislocation density differs from the conclusion in the paper by Groma and Balogh.

Thursday, March 2, 2017 04:00pm - 06:00pm
Seminar room Big Ground floor / Office Bldg West (I21.EG.101)

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