

Quasiconvex elastodynamics: weak-strong uniqueness for measure-valued solutions

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Abstract

This talk concerns a classical system of conservation laws arising in elasticity. One of the main difficulty in elastodynamics is that convex stored energy functions are in contradiction with the basic physical principle of frame-indifference. In this talk I will present a recent result, obtained in collaboration with Kostantinos Koumatos, University of Sussex (UK), proving the weak-strong uniqueness of measure-valued solutions under the assumption that the stored-energy function is strongly quasiconvex. The proof combines the relative entropy method and several tools borrowed from the calculus of variations.