

On local waves in heterogeneous media and their control

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Abstract

The goal of this talk would be to show on few examples, how a material discontinuity in a mechanical system, can be at the origin of local waves. It could be a stationary or a progressive one depending on the boundary conditions and on the geometry. Such a concentration of energy can be responsible of a fatigue phenomenon and therefore, up to a slight extent, it can be compared to what happens in steady fracture mechanics. In order to be able to handle and to control these mechanisms, it is important to find a formulae which is defined from the global energy of the system and which represent the energy developed by these local waves. Then the analysis and the control of these local behaviour can be discussed from both continuous and approximated aspects. This will be the goal of the talk.