Global versus local minimization in rate-independent evolution systems

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Evolution of mechanical systems is often governed by nonconvex stored energies and dissipated energies which can be considered homogenoues of degree-1. The usual global-minimum concept may often be less physical than some force-driven locally-minimal solutions. The various concepts of solutions and various time-discretisations will be discussed, together with the role of the maximum-dissipation principle. Abstract considerations will be illustrated on a delamination problem (=an adhesive contact problem), together with some of its variant as a brittle contact or a mixity-mode sensitive delamination (illustrated by numerical experiments performed by C.G. Panagiotopoulos and R. Vodicka), or a combination with a rate-dependent healing.