

# Finding limiting dissipative potentials via EDP convergence

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A gradient structure for an evolutionary system is a triple, a so-called gradient system, consisting of a state space, a possibly time-dependent energy functional, and a dissipation potential that induces the given evolutionary system. The gradient structure, which is not unique, contains additional thermodynamical information, e.g. on the fluctuations in an associated microscopic model.

Considering a family of gradient systems depending on a small parameter, it is natural to ask for the limiting or effective gradient system if the parameter tends to 0. We propose some ideas towards the derivation of the effective gradient structure that are based on De Giorgi's Energy-Dissipation Principle (EDP). We discuss several versions of EDP convergence and show by examples that the theory is flexible enough to allow situations where starting from quadratic dissipation potentials we arrive at effective dissipation potentials that are no longer quadratic.