

Perturbed Minimizing Movements of Time-Dependent Functionals on Metric Spaces

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Minimizing movement schemes are a fundamental tool for approximating evolution equations that have a gradient-flow structure with respect to an energy. Motivated by homogenization problems involving, for instance, geometries that evolve in time, we consider Γ -converging perturbations of time-dependent driving energies. We study the convergence of the corresponding minimizing movement scheme and provide sufficient conditions under which limits of the scheme are (time-dependent) curves of maximal slope for the limit energy. We further exhibit examples showing that, in general, such a stability property may fail, with the limit motion depending on the relation between the time-discretization parameter τ and the perturbation parameter ε . This is joint work with Jan-Frederik Pietschmann and Antonio Tribuzio.