REFERENCES FOR MARK PELETIER'S LECTURES ON EVOLUTIONARY GAMMA-CONVERGENCE

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0. General references

L. Ambrosio, N. Gigli, and G. Savaré. *Gradient Flows in Metric Spaces and in the Space of Probability Measures*. Lectures in Mathematics ETH Zürich. Birkhäuser, 2008

A. Mielke. On evolutionary Γ-convergence for gradient systems. In *Macroscopic and Large Scale Phenomena: Coarse Graining, Mean Field Limits and Ergodicity*, pages 187–249. Springer, 2016

M. A. Peletier. Variational modelling: Energies, gradient flows, and large deviations. *Arxiv preprint arXiv:1402:1990*, 2014

1. Lecture 1: Gradient flows

General theory and discussion:

R. Rossi and G. Savaré. Gradient flows of non convex functionals in Hilbert spaces and applications. *ESAIM: Control, Optimization and Calculus of Variations*, 12:564–614, 2006

F. Otto. The geometry of dissipative evolution equations: The porous medium equation. *Communications in Partial Differential Equations*, 26:101–174, 2001

F. Santambrogio. *Optimal Transport for Applied Mathematicians*. Birkhäuser, 2015

Different formulations:

S. Daneri and G. Savaré. Lecture notes on gradient flows and optimal transport. *arXiv preprint arXiv:1009.3737*, 2010

M. Muratori and G. G. Savaré. Gradient flows and Evolution Variational Inequalities in metric spaces. I: Structural properties. *arXiv preprint arXiv:1810.03939*, 2018

Rate-independent systems:

A. Mielke and T. Roubícek. *Rate-Independent Systems*. Springer, 2015

Variations of $\mathcal{R}$, rigorous theory:

J. Carrillo, S. Lisini, G. Savaré, and D. Slepcev. Nonlinear mobility continuity equations and generalized displacement convexity. *Journal of Functional Analysis*, 258(4):1273–1309, 2010

2. Lecture 2: Example: Homogenization

On 'classical' or 'simple' EDP-convergence:

E. Sandier and S. Serfaty. Gamma-convergence of gradient flows with applications to Ginzburg-Landau. *Communications on Pure and Applied Mathematics*, 57(12):1627–1672, 2004

S. Serfaty. Gamma-convergence of gradient flows on Hilbert and metric spaces and applications. *Discrete and Continuous Dynamical Systems A*, 31(4):1427–1451, 2011

M. Liero, A. Mielke, M. A. Peletier, and D. R. M. Renger. On microscopic origins of generalized gradient structures. *Discrete and Continuous Dynamical Systems-Series S*, 10(1):1, 2017

Classical homogenization:

A. Braides. *Gamma-Convergence for Beginners*. Oxford University Press, 2002

D. Cioranescu and P. Donato. *An Introduction to Homogenization*, volume 17 of *Oxford lecture series in mathematics and its applications*. Oxford Science Publications, 1999

G. Dal Maso. *An Introduction to* Γ*-Convergence*, volume 8 of *Progress in Nonlinear Differential Equations and Their Applications*. Birkhäuser, Boston, 1993

Generalizations:

A. Mielke. On evolutionary Γ-convergence for gradient systems. In *Macroscopic and Large Scale Phenomena: Coarse Graining, Mean Field Limits and Ergodicity*, pages 187–249. Springer, 2016

G. Savaré. Gradient flows and diffusion semigroups in metric spaces under lower curvature bounds. *Comptes Rendus Mathematique*, 345(3):151–154, 2007

3. Tilted forms of gradient-system convergence

Main reference: A. Mielke, A. Montefusco, and M. A. Peletier. Exploring families of energy-dissipation landscapes via tilting — three types of EDP convergence. In preparation, 2019

Wiggly energies:

P. Dondl, T. Frenzel, and A. Mielke. A gradient system with a wiggly energy and relaxed EDP-convergence. *arXiv preprint arXiv:1801.07144*, 2018

A. Mielke and L. Truskinovsky. From discrete visco-elasticity to continuum rate-independent plasticity: rigorous results. *Archive for Rational Mechanics and Analysis*, 203(2):577–619, 2012