

L. Ambrosio (Scuola Normale Superiore, Pisa)

Title: Calculus in metric measure spaces with Ricci curvature bounded from below

1. Weak and upper gradients in metric measure spaces, basic calculus rules and corresponding Sobolev spaces.
2. The Hopf-Lax semigroup in metric spaces.
3. Laplacian and gradient flow of Cheeger's functionals.
4. Identification of L^2 and Wasserstein gradient flows.
5. Identification of weak and upper gradients, relation with Fisher information.
6. (only if time permits) Linearity of the heat flows and stability.