
Otto calculus for measures of variable mass and a model from spatial ecology

Dmitry Vorotnikov*¹

¹Universidade de Coimbra (PORTUGAL) – Portugal

Abstract

We introduce a new metric on the set of non-negative finite measures which is related to a sort of optimal transport with the mass changing according to certain intrinsic rules. The underlying structure turns out to be much richer than a metric one, and one may, e.g., develop a variable mass version of the celebrated Otto calculus for probability measures [1]. We then consider a degenerate reaction-diffusion model from spatial ecology which is a gradient flow in our calculus, and prove exponential convergence of solutions to the steady state. This is a joint work with S. Kondratyev and L. Monsaingeon.

References

- [1] C. Villani. Optimal transport: old and new. Springer, 2008.

*Speaker