

# SWEEPING PROCESS IN THE WASSERSTEIN SPACE

BERTRAND MAURY

J.J. Moreau introduced in the 70' the so-called Sweeping Process. It describes the evolution of a point in a Hilbert space subject to remain in a moving convex set, while moving as little as possible: it does not move when it lies in the interior of the set, and it is caught up by the boundary whenever needed. We propose an extension to this notion for infinitely many "points", that are described by a measure. We will show that the Wasserstein framework, based on Optimal Transportation, is well adapted to this situation, and makes it possible to address cases where particles interact in different ways, in particular when the density describing the cloud of particles is subject to remain below a maximal value. This is a joint work with Simone Di Marino and Filippo Santambrogio.

UNIVERSITÉ PARIS SUD

*E-mail address:* `Bertrand.Maury@math.u-psud.fr`