

---

# A Wasserstein-type distance in the space of Gaussian Mixture Models

Julie Delon<sup>\*1</sup>

<sup>1</sup>Mathématiques appliquées Paris 5 – CNRS : UMR8145, Université de Paris – France

## Abstract

In this talk we will introduce a Wasserstein-type distance on the set of Gaussian mixture models. This distance is defined by restricting the set of possible coupling measures in the optimal transport problem to Gaussian mixture models. We derive a very simple discrete formulation for this distance, which makes it suitable for high dimensional problems. We also study the corresponding multimarginal and barycenter formulations. We show some properties of this Wasserstein-type distance, and we illustrate its practical use with some examples in image processing.

---

<sup>\*</sup>Speaker