Reduced Models in Wasserstein Spaces for Forward and Inverse Problems

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Forward model order reduction of parametric Partial Differential Equations and inverse state and parameter estimation are two major problems that arise in countless applications. Although these are mature fields and many algorithms have been developed over the years, most works focus on problems posed on Hilbert and Banach spaces, and they are severely challenged by transport dominated PDEs. In this talk, I will present recent works aiming at addressing such challenges and limitations by working in the space of Wasserstein measures.