



PROBABILITY SEMINAR

On the representation of measures

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Abstract. Consider a family of probability measures $\{\mu_x\}_{x \in X}$ on a topological space M parametrised by a given set X . Representing $\{\mu_x\}_{x \in X}$ consists in finding a map $F : X \times \Omega \rightarrow M$ such that, for each $x \in X$, we have, $\mu_x = F(x, \cdot)_* \mathbb{P}$, where (Ω, \mathbb{P}) is an auxiliary probability space. Such questions arise in Probability, Geometry and several other areas. In particular, in Dynamical Systems, it appears in the context of disintegration of measures, and in random perturbation of dynamics, where one is interested in finding a probability on the spaces of maps which mimics a given Markov chain. In this talk, we provide sufficient conditions such that family of probabilities on manifolds can be represented by regular maps. The talk is based on a joint work with Jost, Matveev, and Portegies.