

Title: Existence and uniqueness of the distribution of a random measure given by finite dimensional projections

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Abstract: This thesis deals with the existence and uniqueness of the distribution of a random measure given a system of finite-dimensional distributions. A random measure can be interpreted as a particular system of random variables. Conversely, we will want to know what conditions would allow a system of random variables to be extended to a random measure and if this extension is unique. We will start with a consistent system of finite-dimensional distributions and use Daniell-Kolmogorov theorem to find the necessary and sufficient conditions for the existence of such extension. A counterexample will be included to show that it is not possible to use this theory for random signed measures.

Keywords: Random measure, point process, finite-dimensional distributions.