

Some variations around the empirical measure and their applications to statistics

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We investigate two classes of random measures that share crucial properties with the empirical measure. The first class is that of normalised completely random measures, which are used as priors in Bayesian nonparametrics. The second is a class of random measures which, conditioned to an exogen phenomenon, have the same distribution (in the minimal sense) of an empirical measure. Those can be used successfully to handle statistics of extreme value theory where observations are taken above an order statistic. They also play a role in nearest neighbour rules for kernel-type estimators. We will expose convergence results of the "empirical processes" that are induced by those random measures.