Title: **Weighted sampling, maximum likelihood and divergences**

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Abstract:

Maximum Likelihood is explored in the context of the maximization of the large deviation probability between the empirical measure pertaining to a sample and a model. A connection is presented with the minimum divergence methods in the context of weighted sampling or weighted bootstrap.

Reciprocally we show that for any divergence criterion in a broad class of statistical criterions, we can associate a specific weighted sampling scheme for which minimization of divergence solves a maximum likelihood problem. Such estimators are optimal in various respects. various notions are connected whithin this setting: exponential families and their variance functions, large deviations and the variational form of statistical criterions.