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Title: Maximum likelihood estimation : an asymptotic expansion

Abstract:

Maximum likelihood estimation (MLE) is one of the most common estimation techniques in statistics. Often, finding the MLE corresponds to finding the zero of a random function. This is the case for simple models, such as the binomial one but also in models from statistics of diffusions.

Motivated by the study of the asymptotic behavior of MLEs, in particular the skewness from the limit distribution, we provide expansions of MLEs.

The expansions are based on a sort of asymptotic version of the implicit function theorem. After introducing all necessary notions, if time permits, we will discuss applications in statistics of diffusions.

Based on a work in progress with Antoine Lejay (IECL).