MLE in the partially observed setting: the continuous time case

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Abstract

The classical filtering setting consists of a pair of processes (X, Y), where X is a Markov process and

$$Y_t = \int_0^t h(X_s)ds + V_t,$$

with a function $h(x)$ and a Wiener process V, independent of X. The transition law of X and the function $h(x)$ are assumed to be known up to a parameter, which is to be inferred given a trajectory of Y on the time interval $[0, T]$. In this talk I will survey the results on the MLE in this setting.