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LAN property for stochastic differential equations driven by fractional Brownian motion of Hurst parameter $1/4 < H < 1/2$

In this poster presentation, we consider the problem of estimating the drift parameter of solution to the stochastic differential equation driven by a fractional Brownian motion with Hurst parameter less than $1/2$ under complete observation. Motivated by maximum likelihood estimation, we derive a formula for the likelihood ratio and prove local asymptotic normality when $H \in (1/4, 1/2)$. Our result shows that the convergence rate is $T^{-1/2}$ for the parameters satisfying a certain equation and $T^{-(1-H)}$ for the others. This presentation is based on a preprint arXiv:1804.04108v2.