

# Estimation of the drift function for fractional Ornstein-Uhlenbeck processes with periodic mean

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In recent years there has been a lot of research on the topic of stochastic differential equations driven by the fractional Brownian motion and thus exhibiting long-range dependence. We will consider one class of such equations, namely the fractional Ornstein-Uhlenbeck processes with periodic mean given by the equation  $dX_t = (\sum_{i=1}^p \mu_i \varphi_i(t) - \alpha X_t)dt + \sigma dB_t^H$ , where  $\varphi_i$  are bounded periodic functions. There exists a consistent and asymptotically normal estimator for the vector  $(\mu_1, \dots, \mu_p, \alpha)$ . Based on this result we will construct a new, nonparametric estimator for the drift function and discuss this construction as well as its properties.

## References

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