

**Fares Alazemi**

**Least squares type estimation for discretely observed non-ergodic Gaussian Ornstein-Uhlenbeck processes**

In this work we consider the drift parameter estimation problem for the non-ergodic Ornstein-Uhlenbeck process  $X$  driven by a general Gaussian process. We assume that the process  $X$  is observed at discrete time instants, and we construct two least squares type estimators for the drift parameter based on the discrete observations. Then we provide sufficient conditions, based on properties of the driving Gaussian process, which ensure that our estimators are strongly consistent and verify a tightness property. Finally, we apply our approach to study subfractional Ornstein-Uhlenbeck and bifractional Ornstein-Uhlenbeck processes.

Joint work with Khalifa Es-Sebaiy and Mishari Al-Foraih from Kuwait University.