12:05-12:40 Utku Erdogan (Eskisehir Technical University, Department of Mathematics, Eskisehir, Turkiye)
Numerical simulation of fractional-noise SDEs for all Hurst parameters via Wick-Itô-Skorohod integration
Utku Erdogan (Eskisehir Technical University, Department of Mathematics, Eskisehir, Turkiye)

This talk is based on joint work with Gabriel J. Lord and R. B. Schieven, together with some extensions and ongoing directions. In this talk, I will discuss the numerical approximation of quasilinear stochastic differential equations driven by multiplicative fractional Brownian motion, where the stochastic integral is interpreted in the Wick–Itô–Skorohod (WIS) sense. This interpretation yields a centered stochastic integral that is well-defined for all ($H \in (0, 1)$). After introducing the main ideas behind WIS integration and Wick calculus, I will present a geometric fractional Brownian motion-based Euler method for the quasilinear equation. A key step is the explicit construction of the translation operator required for practical implementation. Finally, I will describe our main convergence results and illustrate the behavior of the method through numerical experiments.