

WEYL MULTIFRACTIONAL ORNSTEIN–UHLENBECK PROCESSES MIXED WITH A GAMMA DISTRIBUTION

BY

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Abstract. The aim of this paper is to study the asymptotic behavior of aggregated Weyl multifractional Ornstein–Uhlenbeck processes mixed with Gamma random variables. This allows us to introduce a new class of processes, Gamma-mixed Weyl multifractional Ornstein–Uhlenbeck processes (GWmOU), and study their elementary properties such as Hausdorff dimension, local self-similarity and short-range dependence. We also prove that these processes approach the multifractional Brownian motion.

2020 Mathematics Subject Classification: Primary 60G22; Secondary 60G17.

Key words and phrases: Weyl multifractional Ornstein–Uhlenbeck process, Gamma distribution, aggregated process, multifractional Brownian motion.

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