

CROSS-VARIATION OF YOUNG INTEGRAL WITH RESPECT TO
LONG-MEMORY FRACTIONAL BROWNIAN MOTIONS

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Abstract: We study the asymptotic behaviour of the cross-variation of two-dimensional processes having the form of a Young integral with respect to a fractional Brownian motion of index $H > \frac{1}{2}$. When H is smaller than or equal to $\frac{3}{4}$, we show asymptotic mixed normality. When H is strictly greater than $\frac{3}{4}$, we obtain a limit that is expressed in terms of the difference of two independent Rosenblatt processes.

2000 AMS Mathematics Subject Classification: Primary: 60F05, 60G15, 60G22; Secondary: 60G18, 60H07.

Keywords and phrases: Fractional Brownian motion, Rosenblatt process, Young integral, Breuer–Major theorem, Taqqu’s theorem, stochastic differential equations.

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