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On uniform convergence of wavelet expansions of φ -sub-Gaussian random processes. (English) [Zbl 1120.60036](#)

Random Oper. Stoch. Equ. 14, No. 3, 209-232 (2006).

The authors present conditions for uniform convergence with probability one of wavelet expansions of φ -sub-Gaussian (in particular, Gaussian) random processes. They show that under certain conditions on the bases of wavelets the wavelet expansions of stationary a.s. continuous Gaussian processes as well as wavelet expansions of the fractional Brownian motion converge uniformly with probability one on any finite interval. Similar results for uniform convergence of the wavelet expansions of bounded functions are proposed in the book by *G. G. Walter* and *X. Shen* ["Wavelets and other orthogonal systems" (2001; [Zbl 1005.42018](#))]. But the majority of random processes, which are interesting from the theoretical point of view as well as from possible applications, have almost surely unbounded sample paths on \mathbb{R} . Among them, for instance, there are Wiener processes, processes of fractional Brownian motion, some classes of stationary processes, etc.

Reviewer: [Mikhail P. Moklyachuk \(Kyïv\)](#)

MSC:

[60G15](#) Gaussian processes

[60G05](#) Foundations of stochastic processes

Cited in **2** Reviews
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