

[Haiman, George](#)

**Étude des extrêmes d'une suite stationnaire m-dépendante avec une application relative aux accroissements du processus de Wiener. (Study of the extremes of a stationary m-dependent sequence with an application to the increments of Wiener processes).** (French)

[Zbl 0631.60031](#)

[Ann. Inst. Henri Poincaré, Probab. Stat. 23, 425-457 \(1987\).](#)

The author investigates a stationary m-dependent sequence  $\{X_i\}$  of random variables. In the first part, a uniform bound for

$$\mu^{-n}(u)P\{\max(X_1, \dots, X_n) \leq n\} - 1$$

is given for a certain  $\mu$  (u) and for large x with  $x < \sup\{y; P(X < y) < 1\}$ . This completes a previous result obtained by the author [[Ann. Inst. Henri Poincaré, Nouv. Sér., Sect. B 17, 309-330 \(1981; Zbl 0479.60044\)](#)]. The result is applied to improve an evaluation of the probability that the increments of the Wiener process remain under a given threshold.

In the second part the records for  $\{X_n\}$  are considered. Let  $\{(T_n, O_n)\}$  be the sequence of record times and record values associated with  $\{X_n\}$ , and let  $\{(S_n, R_n)\}$  be the corresponding sequence associated with the sequence  $\{X'_n\}$  of independent random variables having the same distribution as  $X_1$ . It is shown that  $\{X'_n\}$  can be defined so that  $S_n = T_{n-q}$  and  $R_n = O_{n-q}$  for an integer q and for all large n.

Reviewer: [T.Mori](#)

**MSC:**

- [60F10](#) Large deviations
- [62G30](#) Order statistics; empirical distribution functions
- [60J65](#) Brownian motion

Cited in **3** Reviews  
Cited in **6** Documents

**Keywords:**

extreme value theory; increments of the Wiener process; sequence of record times; record values

**Full Text:** [Numdam](#) [EuDML](#)