

[Daviaud, Olivier](#)

**Thick points for the Cauchy process.** (English) [Zbl 1074.60084](#)  
[Ann. Inst. Henri Poincaré, Probab. Stat.](#) 41, No. 5, 953-970 (2005).

Summary: Let  $\mu(x, \varepsilon)$  denote the occupation measure of an interval of length  $2\varepsilon$  centered at  $x$  by the Cauchy process run until it hits  $(-\infty, -1] \cup [1, \infty)$ . We prove that  $\sup_{|x| \leq 1} \mu(x, \varepsilon) / (\varepsilon (\log \varepsilon)^2) \rightarrow 2/\pi$  a.s. as  $\varepsilon \rightarrow 0$ . We also obtain the multifractal spectrum for thick points, i.e. the Hausdorff dimension of the set of  $\alpha$ -thick points  $x$  for which  $\lim_{\varepsilon \rightarrow 0} \mu(x, \varepsilon) / (\varepsilon (\log \varepsilon)^2) = \alpha > 0$ .

**MSC:**

[60J55](#) Local time and additive functionals

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**Keywords:**

[multifractals analysis](#)

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