

**F.Pene**, "*Functional limit theorems for semi-dispersing billiards with cusps*"

We study stochastic properties of billiards in compact domains with convex scatterers and cusps. More precisely, we are interested in the asymptotic behaviour of ergodic sums of Hölder continuous functions. For cusps with ordinary contact, a functional limit theorem with a non standard normalization has been proved by Bálint, Chernov and Dolgopyat. For billiards with a single symmetric cusp of higher flatness, Jung and Zhang proved a non standard limit theorem (convergence to a stable random variable). We extend this result by proving a non standard functional limit theorem (convergence to a Lévy process) for more general billiards with cusps (allowing several cusps, with more general shape, possibly asymmetric, with possibly different flatness). This is a joint work with Paul Jung and Hong-Kun Zhang.