

Fix an irrational angle α and consider a random walk on the circle, in which a walker jumps to α or $-\alpha$ with a probability distribution depending on the point on the circle. During this talk I would like to discuss the ergodic properties of this random walk, in particular the rate of mixing and Central Limit Theorem. The answer to that question depends on Diophantine properties of α . This is a joint work with Dmitry Dolgopyat.