1127-60-92 **Samy Tindel*** (stindel@purdue.edu), Department of Mathematics, Purdue University, 150 N. University Street, West Lafayette, IN 47907. *Rate of convergence to equilibrium for fractional driven stochastic differential equations with rough multiplicative noise.* Preliminary report.

In this talk we wish to give an account on the problem of the rate of convergence to equilibrium for ergodic stochastic differential equations driven by a fractional Brownian motion with Hurst parameter $H \in (1/3, 1)$ and multiplicative noise component σ. When σ is constant and for every $H \in (0, 1)$, it was proved by Hairer that, under some mean-reverting assumptions, such a process converges to its equilibrium at a rate of order $t^{-\alpha}$ where $\alpha \in (0, 1)$ (depending on H). In this talk, we will show how to extend this result to a multiplicative noise in an irregular situation. We will mainly focus on the general mechanism one should adopt in this context with long range dependence, and we will show how to construct the coupling we need for our purposes. (Received January 25, 2017)