On the geometry of some rough Weierstrass curves: SBR measure and local time

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Time **Thursday, Dec 5, at 13:30**
Place **Campus Belval, room MNO 5A (5th floor)**

We investigate geometric properties of Weierstrass curves with one or two components, representing series based on trigonometric functions. They are Hölder continuous, and not (para-)controlled with respect to each other. They can be embedded into smooth dynamical systems, where their graph emerges as a pullback attractor. It turns out that occupation measures and Sinai-Bowen-Ruelle (SBR) measures on its stable manifold are closely related to each other. A suitable version of approximate self similarity for deterministic functions allows to "telescope" small scale properties from macroscopic ones. As a consequence, absolute continuity of the SBR measure is obtained, as well as the existence of a local time. The link between rough Weierstrass curves and smooth dynamical systems can be generalized considerably. Applications to regularization of singular ODE by rough (Weierstrass type) signals are on our agenda. This is joint work with O. Pamen (U Liverpool and AIMS Ghana), A. Réveillac (U Toulouse) and G. dos Reis (U Edinburgh).