

# USING SPECTRAL ANALYSIS IN THE STUDY OF SARNAK'S CONJECTURE

T. de la Rue, *Univ. Rouen, France*

Sarnak's conjecture asserts that the classical Möbius arithmetic function is orthogonal to any deterministic sequence, i.e. to any sequence output by a topological dynamical system of zero topological entropy.

It turns out that the properties of the measure-theoretic dynamical systems given by the invariant measures of the topological dynamical system are often relevant to prove the validity of this conjecture for a given system.

I will review in particular some spectral properties of measure-theoretic systems ensuring that Sarnak's conjecture holds for all their uniquely ergodic models. This will include spectral properties giving rise to the disjointness of the powers of the transformation (with application to some classes of rank-one systems), or to a weaker condition called Asymptotic Orthogonality of Powers (with application to quasi-discrete spectrum systems).