Valeria BERTHE, IRIF, France

Title: Nonstationary Markov partitions and multidimensional continued fraction algorithms

Abstract: It has been a long standing problem to find good symbolic codings for Kronecker toral translations that enjoy the beautiful properties of Sturmian sequences.
By superimposing a combinatorial structure on matrices, we first see how to construct such symbolic codings in terms of exponentially convergent multidimensional continued fraction algorithms. We then deduce how to associate   sequences of explicit Markov partitions for Anosov families generated by these continued fractions, i.e., nonstationary sequences of toral automorphisms that have well defined stable and unstable manifolds.
As a guiding example, we use mapping families on the two- and three-dimensional tori associated with Brun continued fraction algorithm.
This is joint work with P. Arnoux, M. Minervino, W. Steiner and J. Thuswaldner.