From S-adic systems to torus translations and back

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Abstract : There is a well-known correspondence between rotations on a circle, Sturmian words, and continued fractions. We explore how this can be extended to higher dimension, following the work of N. Pytheas Fogg. In particular, we show that almost every translation on the 2-dimensional torus has a symbolic coding of complexity $2n+1$, given by an S-adic system obtained through a continued fraction algorithm