Contribution Title:	ON THE NUMBER OF FACTORS IN CODINGS OF THREE INTERVAL EXCHANGE
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Invited speaker:	
YRS seminar:	YES

Since the discovery of solid state materials with discrete diffraction diagram revealing crystallographically forbidden 5-fold symmetry, the attention of numerous mathematicians and physicists has been focused on the study of mathematical models for these materials – 'quasicrystals'. The most frequently used model is the so-called cut-and-project set, which arises as a projection of chosen points of a higher dimensional lattice on a lower dimensional 'physical space'.

We restrict ourselves to the most simple case of 2-dimensional lattice and 1-dimensional physical space and we inspect the total number of possible local configurations of modeled quasicrystals. The structure of the physical space of such cut-and-project sets can be equivalently described by infinite ternary words coding transformations of exchange of three intervals with permutation $(3, 2, 1)$.

The aim is to count the cardinality of the set $3\text{iet}(N)$ of factors of length N which belong to the language of an infinite word coding such a transformation. We use the strong relation of 3iet words and 2iet words coding exchange of two intervals, i.e., Sturmian words. The known asymptotic formula $\#2\text{iet}(N)/N^3 \sim 1/\pi^2$ for the number of Sturmian factors allows us to find bounds $1/(3\pi^2) + o(1) \leq \#3\text{iet}(N)/N^4 \leq 2/\pi^2 + o(1)$.