Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Thursday, June ,10 2021*

At *11:10 − 12:00*

In *Online*

Henna Koivusalo (University of Bristol)

will talk about

Linear repetitivity in polytopal cut and project sets

Abstract: Cut and project sets are aperiodic point patterns obtained by projecting an irrational slice of the integer lattice to a subspace. One way of classfiying aperiodic sets is to study the number and repetition of finite patterns. Sets with patterns repeating linearly often, called linearly repetitive sets, can be viewed as the most ordered aperiodic sets. Repetitivity of a cut and project set depends on the slope and shape of the irrational slice. In an earlier work, joint with of Haynes and Walton, we showed that when the slice has a cube shape, linear repetitivity holds fi and only fi the following two conditions are satisfied: (i) the cut and project set has the minimal number of dffierent finite patterns (minimal complexity), and (ii) the irrational slope satisfies a badly approximable condition. In a new joint work with Jamie Walton, we give a generalisation of

this result to all convex polytopal shapes satisfying a mild geometric condition. A key step in the proof is a decomposition of the cut and project scheme, which allows us to make sense of condition (ii) for general polytopal windows.

Please Note the Unusual Place!