Department of Mathematics, BGU

Colloquium

On *Tuesday, June 21, 2022*

At *14:30 − 15:30*

In *Math -101*

Barak Weiss (Tel Aviv University)

will talk about

Horocycle flow on the moduli space of translation surfaces

Abstract: By work of Ratner, Margulis, Dani and many others, unipotent flows on homogeneous spaces have strong measure theoretic and topological rigidity properties. By work of Eskin-Mirzakhani and Eskin-Mirzakhani-Mohommadi, the action of SL(2,R) and the upper triangular subgroup of SL(2,R) on strata of translation surfaces have similar rigidity properties. We will describe how some of these results fail for the horocycle flow on strata of translation surfaces. In particular, 1) There exist horocycle orbit closures with fractional Hausdorff dimension. 2) There exist points which do not equidistribute under the horocycle flow with respect to any measure. 3) There exist points which equidistribute distribute under the horocycle flow to a measure, but they are not in the topological support of that measure. This is joint work with Jon Chaika and John Smillie. The talk will be elementary and will require no prior background in dynamics.