

Department of Mathematics, BGU

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# BGU Probability and Ergodic Theory (PET) seminar

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*On Thursday, May, 14 2026*

*At 11:10 – 12:00*

*In 101-*

Zvi Shem-Tov (BGU)

will talk about

## **Equidistribution of $L^2$ mass on Hyperbolic 4-manifolds**

Abstract: The quantum unique ergodicity (QUE) conjecture of Rudnick and Sarnak says that the  $L^2$  mass of eigenfunctions of the Laplacian in hyperbolic manifolds equidistributes, as the eigenvalues tend to infinity. We consider a special class of such functions, Hecke–Maass forms, that are central in number theory. The conjecture has been established for these functions in dimension 2 and 3 but in dimension 4 there is a new challenge: one needs to rule out concentration of measure along certain large totally geodesic submanifolds. We will discuss our recent result in which we overcome this difficulty for a particular sequence of eigenfunctions known in number theory as  $L^2$  mass. This is a joint work with Alexandre de Faveri.