Speaker: Dubi Kelmer

Title: An optimal spectral gap for the Apollonian group

Abstract: In 2007, Sarnak asked if it is possible to show that the Patterson-Sullivan base eigenvalue is the unique eigenvalue of the hyperbolic laplacian of the Apollonian 3-fold. In this talk I will describe new results, joint with A. Kontorovich and C. Lutsko, establishing that this is indeed the case, thus establishing a maximal spectral gap. I will also describe the application of this method for other Kleineian groups corresponding to sphere packings.