DENSITY OF SHAPES OF PERIODIC TORI IN THE CUBIC CASE

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Time：**Wednesday , July 31, 2024, 13:30-14:30**

Venue：**Room 102, SCMS**

Abstract：

Given a compact orbit of diagonal action on $SL(3,\R)/SL(3,\Z)$, the set of periods of the orbit forms a lattice in the diagonal group, which can be identified with $\Z^2$. We refer to this lattice as the shape of the compact orbit, which can be identified as a point in $SL(2,\R)/SL(2,\Z)$ after re-scaling to covolume one.

We prove that in $SL(3,\R)/SL(3,\Z)$ the shapes of periodic tori are dense in $SL(2,\R)/SL(2,\Z)$. The dense family of shapes are constructed explicitly from a family of cubic orders and their suborders. The talk is based on an ongoing joint work with Thi Dang and Nihar Gargava.