

On the Dimension of Limit Sets on the Real Projective Plane via Stationary Measures

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I will present a dimension jump result of limit sets on \mathbb{RP}^2 for representations of surface groups in $SL(3, \mathbb{R})$. For Anosov representations, we prove the equality between the Hausdorff dimension and the affinity dimension. In particular, it reveals a dimension jump under perturbation. The core of the proof is to study the stationary measures of finitely supported random walks on $SL(3, \mathbb{R})$. We show the Hausdorff dimensions of the measures are equal to their Lyapunov dimensions under certain assumptions. This is based on ongoing joint work with Jialun Li and Disheng Xu.

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