On the topology of the Teichmüller space of negatively curved Riemannian metrics

Thursday, November 8, 2018 11:35 AM (50 minutes)

This talk is a survey on results concerning the space $T^{<0}(M)$, which we call the Teichmüller space of negatively curved Riemannian metrics on M. It is defined as the quotient space of the space of all negatively curved Riemannian metrics on M modulo the space of all isotopies of M that are homotopic to the identity. This space was shown to have highly non-trivial homotopy when M is real hyperbolic by Tom Farrell and Pedro Ontaneda in 2009. Then in 2015, it was shown to be non simply connected in my thesis when M is a suitably chosen Gromov-Thurston manifold (which are examples of negatively curved non-locally symmetric spaces). In 2017, Tom Farrell and myself proved a similar result for M being a suitable complex hyperbolic manifold. In all these results, the dimension of M has to be 4k - 2 for some $k \ge 2$. In this talk, I will explain this project, and talk about the tools we have used so far in unraveling it. I will also mention the cases that are still open in this project.

Summary

Presenter: SORCAR, Gangotryi (Einstein Institute of Mathematics, HUJI)