

Abstract

The study of convex co-compact hyperbolic manifolds from the data on their convex subdomains has long been a topic of study. Bers' double uniformization theorem states that there is a complete identification between the deformation space of such manifolds and the conformal structure on their ideal boundary. Thurston showed that any convex co-compact hyperbolic manifold contains a smallest compact convex domain with the same homotopy type as the manifold, called the convex core. He also conjectured that there is a one-to-one correspondence between the invariants of the convex core boundary and the deformation space of the 3-dimensional manifold. Later, the work of Labourie and Schlenker established a one-to-one correspondence between the induced metric on the boundary of smoothly embedded convex subdomains of the manifold and the deformation space of the 3-dimensional manifold. This talk will focus on the relation between convex co-compact hyperbolic 3-manifolds and the invariants induced on the boundary of their convex subdomains, with a focus on what occurs when these invariants are combined.