HYPERBOLIC 3-MANIFOLDS AND THE GEOMETRY OF THE CURVE COMPLEX

BRIAN BOWDITCH

The curve complex introduced by Harvey is a simplicial complex associated to a compact surface. It has been much used in the study the mapping class group. It also plays a central role in recent work on the geometry of non-compact hyperbolic 3-manifolds, in particular by Minsky and his collaborators towards proving Thurston's ending lamination conjecture. It also has close connections with the geometry of Teichmuller space. We shall give a brief survey of some of this work, and describe how the ideas interact to give new insights into the mapping class group.