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Title: **Moebius structures on the boundary of hyperbolic spaces.**

A main feature of the classical hyperbolic space H^n is the deep relation between the geometry of this space and the Moebius geometry of its boundary at infinity. For example the isometries of the hyperbolic space correspond to Moebius transformations of its boundary. Many of these relations can be generalized to Riemannian manifolds of negative curvature and even more general to so called CAT(-1) spaces or even to Gromov hyperbolic spaces.

In the lecture we explain what a Moebius structure is and how one can associate to generalized hyperbolic spaces a Moebius structure at infinity. Then we study the (much more complicated) inverse problem: to what extent can one reconstruct the hyperbolic space from the Moebius structure.

This question is related to many classical problems: e.g. problems concerning the conjugacy problem of the geodesic flow on surfaces and questions the marked length spectrum.

In general the question is very open and only partial answers are known.