1038-20-268 **Igor Mineyev*** (`mineyev@math.uiuc.edu`), Department of Mathematics, University of Illinois at Urbana-Champaign, 250 Altgeld Hall, 1409 W. Green Street, Urbana, IL 61801. *Metrics and rigidity questions for hyperbolic groups.*

As one proceeds from hyperbolic manifolds to negatively curved ones, the picture becomes “quasified”, but intrinsically, the negatively curved metric on the manifold and its induced metric on the boundary are related in a conformal, rather than quasiconformal way. A “much more quasified” setting is that of hyperbolic groups. I will outline a proof that nevertheless the same relation holds: each hyperbolic group admits an invariant metric on itself which in turn induces a conformally invariant metric on the boundary. This, in particular, yields a sharp notion of *stereographic projection* for boundaries of hyperbolic groups.

Considering classes of such metrics allows defining hyperbolic dimension $\hbar(\Gamma)$ which can be viewed as an equivariant version of Pansu’s conformal dimension or of the minimal volume entropy.

Generalizing Mostow rigidity, Besson-Courtois-Gallot showed that a manifold of minimal volume entropy among negatively curved manifolds of the same volume in the same homotopy class must be symmetric. The question whether the same holds for hyperbolic groups makes no sense, much less the answer. The above metrics allow formulating these and other interesting rigidity questions, as well as avoiding the “quasi”-language, in hyperbolic group. (Received February 11, 2008)