1051-30-151 **Zair Ibragimov*** (zibragimov@fullerton.edu), 154 McCarthy Hall, Fullerton, CA 92831.
Hyperbolizing Hyperspaces.

We construct a Gromov hyperbolic metric space by prescribing any complete metric space with no isolated points as its boundary at infinity. Our construction comes equipped with an extension operator that takes the power quasisymmetries between the boundaries at infinity to the quasiisometries between the spaces. In addition, the extension operator has a desirable property of compatibility under composition. Chordal metrics in arbitrary metric spaces are introduced in order to prescribe unbounded metric spaces as boundaries at infinity. The chordal metrics will also serve as visual metrics on the boundary at infinity. For example, when the Euclidean space $\mathbb{R}^n$ is prescribed, the space we construct is (up to a rough isometry) the hyperbolic space $\mathbb{H}^{n+1}$ and the chordal metric we define coincides with the standard chordal metric on $\mathbb{R}^n \cup \{\infty\}$. As an application we show that the Bearling-Ahlfors extension operator has "rough" composition property. (Received August 23, 2009)