

The Croke and Kleiner boundaries

Julia M. Wilson

Department of Mathematical Sciences

SUNY Fredonia

April 15, 2004

Abstract

In 1997, Chris Croke and Bruce Kleiner gave a construction for a family of CAT(0) spaces $\{X_\alpha : 0 < \alpha \leq \frac{\pi}{2}\}$ that each admit a geometric action by the same group G . They showed that $\partial X_\alpha \not\cong \partial X_{\pi/2}$ for all $0 < \alpha < \frac{\pi}{2}$. In this talk, we will examine the structure of these spaces and their boundaries, and show that in fact $\partial X_\alpha \not\cong \partial X_\beta$ for all $\alpha \neq \beta$, so that G is a CAT(0) group with uncountably many non-homeomorphic boundaries. This is a remarkable deviation from the boundary rigidity of hyperbolic groups.