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Thomas Crawford* (crawfoth@bc.edu). *Free Bicuspid Groups in Small-Cusped Hyperbolic 3-Manifolds*. Preliminary report.

One approach to the study of cusped hyperbolic 3-manifolds is to look at the shape of the cusp itself. Cusps lift to collections of horospheres in \mathbb{H}^3 . By specifying parameters which govern aspects such as the size, shape, and twist of the isometries of a manifold, we can determine the relative size and positioning (known as the packing) of these horospheres. Typically hyperbolic 3-manifolds with low volume exhibit cycles of tangent horospheres known as bracelets (or necklaces). We consider manifolds with cusps that have no such bracelets. Put another way, we consider manifolds M with the property that $\pi_1(M)$ has a subgroup $B \cong \mathbb{Z}^2 * \mathbb{Z}$, known as a free bicuspid group. Specifically we attempt to determine how small a cusp can be if it has no bracelets. (Received September 26, 2017)