A pyramidal cell in $\mathbf{R}^{n-1}$ corresponds to a convex cell in $\mathbf{H}^n$ together with an ideal point p in its boundary, such that any two faces with closures containing p meet inside $\mathbf{H}^n$. A non-pyramidal cell corresponds to a convex cell in $\mathbf{H}^n$ and an ideal point p contained in the closures of two non-intersecting faces of the convex cell. The hypothesis needed in order to apply Theorem 10.1, that there are only a finite number of orbits of non-pyramidal cells, comes from the fact that there are only a finite number of pairs of faces and therefore only a finite number of pairs of non-intersecting faces which meet at infinity.

It follows that the inverse image in X of any point of $\bar{Q}$ is finite. Moreover the number of points in the inverse image is bounded by a fixed integer N. Two points $x, y \in X$ are mapped to the same point of $\bar{Q}$ if and only if there is a sequence $(x_0, \ldots, x_n)$ such that $x = x_0$, $y = x_n$ and $x_{i+1} = A(F_i)(x_i)$, where $x_i \in F_i$ and $x_{i+1} \in R(F_i)$. (Here (R, A) is the glueing data.) We may take $n \leqslant N$. It follows easily from compactness and the finiteness of the situation that the map $X \to \bar{Q}$ is closed. Therefore $\bar{Q}$ is hausdorff. □

REFERENCES

[Ale54] ALEKSANDROV, A.D. Filling space by polyhedra. *Vestnik. Leningrad Univ. Math. 2* (1954), 33-34.

[Apa86] APANASOV, B.N. Filling a space by polyhedra and deformation of incomplete hyperbolic structures. *Siberian Math. J. 27* (1986), 473-485. (English translation.)

[Bea83] BEARDON, A.F. *The Geometry of Discrete Groups.* Springer-Verlag, 1983.

[Bow93] BOWDITCH, B. Geometrical finiteness for hyperbolic groups. *J. Funct. Anal. 113* (1993), 245-317.

[BP92] BENEDETTI, R. and C. PETRONIO. *Lectures on hyperbolic geometry.* Springer-Verlag, 1992.

[BSS89] BLUM, L., M. SHUB and S. SMALE. On a theory of computation and complexity over the real numbers: NP-completeness, recursive functions and universal machines. *Bull. Amer. Math. Soc. 21* (1989), 1-46.

[dlH91] DE LA HARPE, P. An invitation to Coxeter groups. In: *Group theory from a geometrical viewpoint,* Ghys-Haefliger-Verjovsky editors, World Scientific Publishers, Singapore, 1991.

[dR71] DE RHAM, G. Sur les polygones générateurs de groupes fuchsiens. *Enseign. Math. 17* (1971), 49-61.

[Mas71] MASKIT, B. On Poincaré's theorem for fundamental polygons. *Adv. Math. 7* (1971), 219-230.

[Mas88] —— *Kleinian Groups.* Springer-Verlag, 1988.

[Mor78] MOROKUMA, T. A characterization of fundamental domains of discontinuous groups acting on real hyperbolic spaces. *J. Fac. Sci. Univ. Tokyo Section 1A Math. 25* (1978), 157-183.

[Poi82] POINCARÉ, H. Théorie des groupes fuchsiens. *Acta Math. 1* (1882), 1-62.
[Poi83] —— Mémoire sur les groupes Kleinéens. *Acta Math. 3* (1883), 49-92.
[Poi52] —— *Collected Works*. Gauthier-Villars, 1952.
[Ril83] RILEY, R. Applications of a computer implementation of Poincaré's theorem on fundamental polyhedra. *Math. Comp.* (1983), 607-632.
[Sei75] SEIFERT, H. Komplexe mit Seitenzuordnung. *Göttinger Nachrichten* (1975), 49-80.
[Thu] THURSTON, W.P. The geometry and topology of three-dimensional manifolds. (In preparation.)
[Thu80] —— *The Geometry and Topology of Three-Manifolds.* Princeton University Mathematics Department, 1980. (Thurston's original notes.)

(Reçu le 10 novembre 1993)

David B.A. Epstein
University of Warwick (Coventry, England)
and Geometry Center (Minneapolis, USA)

Carlo Petronio
Università di Pisa (Italy)