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THE CONVERGENCE OF CIRCLE PACKINGS TO THE RIEMANN MAPPING

BURT RODIN[1] & DENNIS SULLIVAN[2]

1. Introduction. In his address,[3] "The Finite Riemann Mapping Theorem", Bill Thurston discussed his elementary approach to Andreev's theorem (see §2 below) and gave a provocative, constructive, geometric approach to the Riemann mapping theorem (see §3). The method is quite beautiful and easy to implement on a computer (see Appendix 2).

In this paper we prove Thurston's conjecture that his scheme converges to the Riemann mapping. Our proof uses a compactness property of circle packings, a length-area inequality for packings, and an approximate rigidity result about large pieces of the regular hexagonal packing (§3 and Appendix 1).

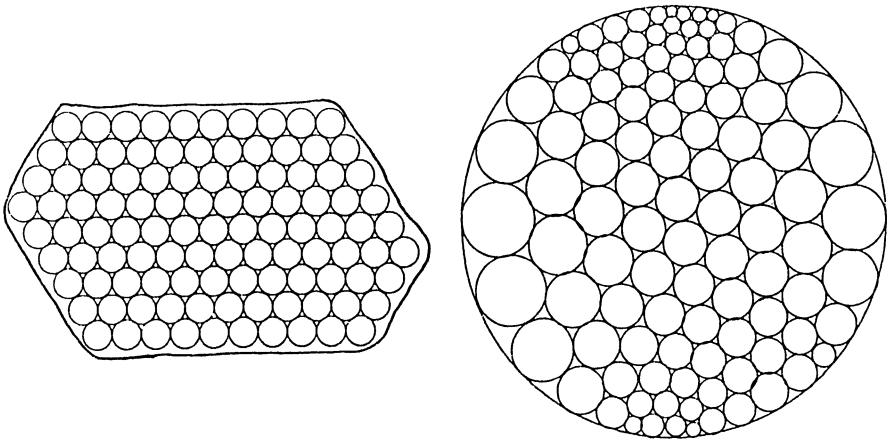

FIGURE 1.1. An approximate conformal mapping

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[3]International Symposium in Celebration of the Proof of the Bieberbach Conjecture. Purdue University, March 1985.