

The Kepler Conjecture

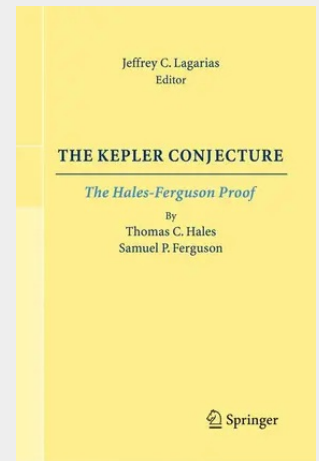
The Hales-Ferguson Proof

The Kepler conjecture, one of geometry's oldest unsolved problems, was formulated in 1611 by Johannes Kepler and mentioned by Hilbert in his famous 1900 problem list. The Kepler conjecture states that the densest packing of three-dimensional Euclidean space by equal spheres is attained by the "cannonball" packing. In a landmark result, this was proved by Thomas C. Hales and Samuel P. Ferguson, using an analytic argument completed with extensive use of computers.

This book centers around six papers, presenting the detailed proof of the Kepler conjecture given by Hales and Ferguson, published in 2006 in a special issue of *Discrete & Computational Geometry*. Further supporting material is also presented: a follow-up paper of Hales et al (2010) revising the proof, and describing progress towards a formal proof of the Kepler conjecture. For historical reasons, this book also includes two early papers of Hales that indicate his original approach to the conjecture.

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