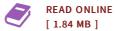# Lectures on Sphere Arrangements - the Discrete Geometric Side (Paperback)

By Károly Bezdek

Springer-Verlag New York Inc., United States, 2015. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.This monograph gives a short introduction to the relevant modern parts of discrete geometry, in addition to leading the reader to the frontiers of geometric research on sphere arrangements. The readership is aimed at advanced undergraduate and early graduate students, as well as interested researchers. It contains more than 40 open research problems ideal for graduate students and researchers in mathematics and computer science. Additionally, this book may be considered ideal for a one-semester advanced undergraduate or graduate level course. The core part of this book is based on three lectures given by the author at the Fields Institute during the thematic program on Discrete Geometry and Applications and contains four core topics. The first two topics surround active areas that have been outstanding from the birth of discrete geometry, namely dense sphere packings and tilings. Sphere packings and tilings have a very strong connection to number theory, coding, groups, and mathematical programming. Extending the tradition of studying packings of spheres, is the investigation of the monotonicity of volume under contractions of arbitrary arrangements of spheres. The third major topic...

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