



Computing the Continuous Discretely 2015: Integer-Point Enumeration in Polyhedra (Hardback)

By Matthias Beck, Sinai Robins

Springer-Verlag New York Inc., United States, 2016. Hardback. Book Condition: New. 2nd Revised edition. 235 x 155 mm. Language: English . Brand New Book. This richly illustrated textbook explores the amazing interaction between combinatorics, geometry, number theory, and analysis which arises in the interplay between polyhedra and lattices. Highly accessible to advanced undergraduates, as well as beginning graduate students, this second edition is perfect for a capstone course, and adds two new chapters, many new exercises, and updated open problems. For scientists, this text can be utilized as a self-contained tooling device. The topics include a friendly invitation to Ehrhart's theory of counting lattice points in polytopes, finite Fourier analysis, the Frobenius coin-exchange problem, Dedekind sums, solid angles, Euler-Maclaurin summation for polytopes, computational geometry, magic squares, zonotopes, and more. With more than 300 exercises and open research problems, the reader is an active participant, carried through diverse but tightly woven mathematical fields that are inspired by an innocently elementary question: What are the relationships between the continuous volume of a polytope and its discrete volume? Reviews of the first edition: You owe it to yourself to pick up a copy of Computing the Continuous Discretely to read about a...



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