



Torus Actions and Their Applications in Topology and Combinatorics

By V. M. Buchstaber, Taras Panov

American Mathematical Society. Paperback. Book Condition: new. BRAND NEW, Torus Actions and Their Applications in Topology and Combinatorics, V. M. Buchstaber, Taras Panov, This book presents the study of torus actions on topological spaces that is presented as a bridge connecting combinatorial and convex geometry with commutative and homological algebra, algebraic geometry, and topology. This established link helps in understanding the geometry and topology of a space with torus action by studying the combinatorics of the space of orbits. Conversely, subtle properties of a combinatorial object can be realized by interpreting it as the orbit structure for a proper manifold or as a complex acted on by a torus. The latter can be a symplectic manifold with Hamiltonian torus action, a toric variety or manifold, a subspace arrangement complement, etc., while the combinatorial objects include simplicial and cubical complexes, polytopes, and arrangements. This approach also provides a natural topological interpretation in terms of torus actions of many constructions from commutative and homological algebra used in combinatorics. The exposition centers around the theory of moment-angle complexes, providing an effective way to study invariants of triangulations by methods of equivariant topology. The book includes many new and well-known open problems and would be...



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