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Lattices of Faces of a Finite Dimensional Cone

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Abstract

Let V be an n-dimensional real vector space which is partially ordered by a closed, full, pointed cone K. The meet and the join of any two faces of K can be defined in such a way as to make the set of all faces a lattice. We explore the connections between the geometric nature of K and the lattice properties of the face lattice, specifically when the face lattice is semimodular or when it is distributive. In particular, it is not too difficult to show that the face lattice is distributive if and only if the cone is isomorphic with the nonnegative orthant.

Date: Thursday, October 28, 2010

Time: 15:00

Place: IMBM Seminar Room, Boğaziçi University