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# The Bergman Complex of a Matroid and Phylogenetic Trees

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Abstract for the Combinatorics Seminar 2004 March 5

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I will talk about the Bergman complex  $B(M)$  of a matroid  $M$ : a polyhedral complex which arises in algebraic geometry, but which we describe purely combinatorially. We prove that a natural subdivision of the Bergman complex of  $M$  is a geometric realization of the order complex of its lattice of flats. In addition, we show that the Bergman fan  $B'(K_n)$  of the graphical matroid of the complete graph  $K_n$  is homeomorphic to the space of phylogenetic trees  $T_n$ .

This is joint work with Federico Ardila.

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