



Hereditary Polytopes

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Every regular polytope has the remarkable property that it inherits all symmetries of each of its facets. This property distinguishes a natural class of polytopes which are called hereditary. Regular polytopes are by definition hereditary, but the other polytopes in this class are interesting, have possible applications in modeling of structures, and have not been previously investigated. This paper establishes the basic theory of hereditary polytopes, focussing on the analysis and construction of hereditary polytopes with highly symmetric faces.

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