

Toric Arrangements

An introduction between algebra, topology and combinatorics

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Abstract

In the first part, we will introduce the theory of hyperplane arrangements with particular attention to the cohomology algebra of the complement of the arrangement. The talk will start from the basic definitions of the topological and combinatorial objects involved. We will exhibit the connections between hyperplane arrangements and other branches of Mathematics, e.g. knot theory, graph theory.

The second part will focus on toric arrangements, a generalization of hyperplane arrangements. We will give a presentation of the cohomology algebra of the complement of a toric arrangement (this is a joint work with F. Callegaro, M. D'Adderio, E. Delucchi, and L. Migliorini) and we will discuss its dependency on the combinatorial data of the arrangement.