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## **Complex Toric Arrangements: Combinatorial Models and the Fundamental Group**

## Abstract for the Combinatorics Seminar 2011 September 20

The study of arrangements of subtori in the complex torus  $T = C^n$  is a recently thriving topic. It has some structural similarities with the theory of hyperplane arrangements, yet it bears its own peculiarities.

The Salvetti complex is a combinatorial model of the complement of a complexified real arrangement of hyperplanes. We take Salvetti's work as a stepping stone to develop a combinatorial model for the complement of a complex toric subspace arrangement,  $M := T \setminus A$ , where A is the union of the subtori in the arrangement. More precisely, we prove that M is homotopy equivalent to the nerve of a combinatorially defined acyclic category. Then, we find a presentation of the fundamental group of M.

This is joint work with Giacomo D'Antonio of the University of Bremen.

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