1037-05-38 **Luca Moci*** (`lucamoci@hotmail.com`), Via F. D'Ovidio, 34, 00137 Roma, RM, Italy.
Combinatorics and invariants of toric arrangements.

Kostant's partition function counts in how many ways a vector can be written as a sum of positive roots. It plays an important role in representation theory, and can be computed by the residues method; geometrically this leads to associate to the root system a "toric arrangement". De Concini and Procesi have expressed the cohomology of the complement of this arrangement as a sum of contributions given by its "components". The Weyl group acts naturally on these components; I will show how this action can be described by the combinatorics of affine Dynkin diagrams. This allows to count the components of the arrangement, and then to compute explicitely the Poincare' polynomial of its complement. This is done by comparing the toric arrangement with the hyperplane arrangement defined by the same root system, whose spaces are thought as the "tangent spaces" of the components. Finally I will show that the absolute value of the Euler characteristic is equal to the order of the Weyl group. (Received January 10, 2008)