The Bernstein-Sato polynomial of the Vandermonde determinant and the Strong Monodromy Conjecture

Asilata Bapat, May 5th 2015, Cologne

Abstract: To a singularity of an algebraic hypersurface, one can associate an invariant called the Bernstein-Sato polynomial or the b-function. Although the b-function is important and interesting, it is usually difficult to compute. In this talk, I will describe some results towards computing the b-function of the Vandermonde determinant. It is conjectured (Strong Monodromy Conjecture) that some roots of the b-function can be obtained from the poles of another singularity invariant, the topological zeta function. I will sketch the proof of the SMC for the case of finite Coxeter hyperplane arrangements, via the "n/d conjecture" of Budur, Mustaţă, and Teitler. This is joint work with Robin Walters.