980-14-49 **Uli Walther*** (walther@math.purdue.edu), 1395 Math Sciences Bldg, Purdue University, West Lafayette, IN 47907. *Bernstein-Sato polynomials and Milnor fibers of generic arrangements.*

The Bernstein-Sato polynomial $b_f(s)$ is an invariant of a hypersurface singularity $V = f^{-1}(0)$ defined through a functional equation

$$P(s) \bullet (f^{s+1}) = b_f(s) \cdot f^s$$

of linear differential operators with polynomial coefficients. The roots of this polynomial are connected to the singularity structure of V in numerous ways. A precise description of the root set in general is, however, outstanding.

In this talk we explain how the Bernstein-Sato polynomial is connected to the cohomology of the Milnor fiber of f provided that f is homogeneous. This allows to obtain information on the cohomology of the Milnor fiber of generic central arrangements.

Non-generic central arrangements provide an interesting challenge inasmuch as $b_f(s)$ then has somewhat mysterious roots. (Received July 23, 2002)