Lorenz Wotzlaw
"Generalized Griffiths calculus"

TIME:
24 Jan 2006, 14:00 - 16:00

LOCATION:
FU-Berlin, Institut für Mathematik
Arnimallee 6, Rm 025/026

If
 is a smooth hypersurface in
, the Jacobian ring of
 calculates the graded parts of the Deligne-Hodge-structure on the primitive cohomology:

This is a well-known result of P. Griffiths, which extends to case of (quasi-) smooth complete intersections in toric varieties. It allows to represent Hodge-theoretical objects related to families of such varieties, like Higgs-bundles and Yukawa-couplings. Among the applications are global Torelli theorems and curve-counting in mirror symmetry.
The aim of the talk is to relax the smoothness condition and give a generalized ``Griffiths calculus'' for intersection cohomology of (families of) hypersurfaces in
 with isolated singularities. The proof will use the theory of
-modules, namely mixed Hodge modules of M. Saito. A special focus will be on nodal threefolds in
; here intersection cohomology is isomorphic to ordinary cohomology of a small resolution.

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