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Section:

4. Algebraic Geometry

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Variational Torelli result for hypersurface singularities

There is an invariant, the Brieskorn lattice, which is associated to any complex isolated hypersurface singularity. It can either be seen as an equivalence class of period matrices or as a generalization of a polarized mixed Hodge structure. Given a μ-constant family of hypersurface singularities, we obtain a moduli space for this invariant and a period mapping.
We can prove a variational Torelli – and thus a generic Torelli – for all semiquasihomogeneous singularities with sufficiently big μ-constant stratum.
The proof uses the Gauß-Manin connection and the primitive forms of K. Saito together with results of M. Saito. A primitive form provides the base space of the semiuniversal unfolding with the structure of a Frobenius manifold.