# Oberseminar Institut für Algebraische Geometrie

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### Vanishing cycle of divisors.

Given a holomorphic function on a complex manifold, the vanishing cycle complex of the function encodes cohomology of Milnor fibers. In projective algebraic geometry, we often encounter divisors rather than functions. In this talk, I will explain how to glue vanishing cycle complexes of local defining functions of a divisor and endow each associated graded part of the monodromy weight filtration with a structure of twisted pure Hodge module, using ideas from geometric representation theory. This construction brings tools from birational geometry such as vanishing theorems to the study of vanishing cycles. Furthermore, we define a sequence of ideal sheaves, which encode Hodge-theoretic information of singularities of divisors. It turns out that these ideal sheaves are closely related to the Hodge ideals introduced by Mustata-Popa. This is based on the joint work (partially in progress) with Christian Schnell.

Thursday, 21.7., 16:30, B302

~~Freitag, 22.07.2022~~

~~10:45 - 11:45, Raum A410~~

Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.