

Irregular Perverse Sheaves and Vanishing Cycles at Fixed Angle

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Abstract: Motivated by the recent results of D'Agnolo-Kashiwara in dimension one, a main goal of this project is to obtain stalk formulas for the enhanced nearby and vanishing cycles functors in arbitrary dimensions. We do this by using the notion of nearby and vanishing cycles at fixed angle, introduced by Massey.

From this perspective, we give an interpretation of the enhanced perverse vanishing cycles object in terms of two distinct (but Verdier-dual) notions from the theory of Stokes-filtered local systems with poles along a divisor D : as the sheaf of sections with greater than moderate growth along D , and as the sheaf of sections with rapid decay along D .