

Intersection homology \mathcal{D} -module in positive characteristic

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For Y a closed normal subvariety of codimension c of a smooth complex variety X , Brylinski and Kashiwara showed that the local cohomology module $H_Y^c(X, \mathcal{O}_X)$ contains a unique simple \mathcal{D}_X -submodule, denoted by $\mathcal{L}(Y, X)$.

In my talk I will discuss the analogous result for X and Y defined over a perfect field of positive characteristic, relating $\mathcal{L}(Y, X)$ to the theory of tight closure. Just as in characteristic zero these results can be placed in the framework of a Riemann-Hilbert-type correspondence which was recently discovered by Emerton-Kisin.