

Why use perverse sheaves to study hypersurface singularities?

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Abstract: In his classic 1968 book "Singular Points of Complex Hypersurfaces", Milnor presented the world with the "right" machinery to study the local topology of non-smooth complex hypersurfaces. Since that time, the derived category and perverse sheaves have emerged as powerful tools in the study of such singular spaces.

In the first hour, I will describe much of Milnor's work and, in the second hour, I will try to explain how perverse sheaves are used in the study of singular hypersurfaces. I will necessarily leave out MANY technical details.