

GENERALIZED NEARBY CYCLES VIA LOGARITHMIC AND RELATIVE D-MODULES

Speaker: Lei Wu
Zhejiang University

Time: Tue., Dec. 16th, 16:00-17:00

Venue: Room 405, SCMS

Abstract: Nearby cycles for D-modules along a hypersurface were introduced by Kashiwara and Malgrange by using the so-called V-filtrations and by Beilinson-Bernstein by using b-functions in 1980s, which provide a powerful tool in algebraic geometry and representation theory. In this talk, I will construct (generalized) nearby cycles for regular holonomic D-modules along F , a finite union of hypersurfaces, motivated by the method of Beilinson-Bernstein. Then I will give a logarithmic interpretation of Bernstein-Sato ideals of F by using the log structures induced from the graph embedding of F . Finally, I will explain that the relative support of the (generalized) nearby cycles along log strata are infinite union of linear subvarieties defined over \mathbb{Q} , determined by the zeroes of the Bernstein-Sato ideals along the same strata, which generalizes a classic result of Kashiwara and Malgrange.