FUDAN-SCMS ALGEBRAIC GEOMETRY SEMINAR
ZOOM MEETING SEMINAR

LECTURE :
CONSTRUCTIBILITY OF LOG DE RHAM COMPLEXES FOR LATTICES OF HOLONOMIC D-MODULES

Speaker: Lei Wu (The University of Utah)

Time：Thu, Jan 14, BJS 10:00-11:00 (GMT 2:00-3:00)

Zoom Meeting Id: 655 418 41814

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Abstract: In the classical Hodge theory, the de Rham complex is quasi-isomorphic to the C-constant sheaf on a complex manifold X. Fixing a normal crossing divisor on X, one can construct the logarithmic (log) de Rham complex. Grothendieck comparison says that the log de Rham complex is quasi-isomorphic to the perverse sheaf given by the maximal extension of the constant sheaf on the complement of the divisor. Deligne then extended the comparison to the case for Deligne lattices associated to complex local systems on the complement of the divisor and obtained the so-called Grothendieck-Deligne comparison which leads to the construction of Riemann-Hilbert Correspondence for regular holonomic D-modules. In the log category, one can construct lattices for all holonomic D-modules. In this talk, I will discuss the log de Rham complexes for lattices of holonomic D-modules and prove their constructibility in general by using relative D-modules. If time allows, I will talk about some open questions about Riemann-Hilbert Correspondence in the log category as well as for relative D-modules.