Talk
April 1, 14:00 – 14:50

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Counting curves with Calabi-Yau gerbes

To start the talk, I will recall the beautiful relationship between topological strings, enumerative geometry and variations of Hodge structure via mirror symmetry.
I will then discuss a recent proposal for the interpretation of the A-model topological string partition function on nodal Calabi-Yau threefolds that carry a flat but topologically non-trivial B-field.
From an enumerative perspective, this is conjectured to encode a refinement of the usual Gopakumar-Vafa invariants with respect to a torsion curve class that only exists in small resolutions that have a trivial canonical class but are not Kaehler.

After illustrating the phenomenon at the hand of the quintic, my focus will be on the relation under mirror symmetry to variations of Hodge structure that have an atypical integral structure. This integral structure can be interpreted in terms of the singular geometry and the non-trivial B-field topology.