

T-Duality and the Coherent-Constructible Correspondence

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I will describe a triangle of equivalences between three categories:

- (a) coherent sheaves on a toric variety;
- (b) a Fukaya category of Lagrangian submanifolds of a symplectic vector space; and
- (c) a category of constructible sheaves on a real vector space.

The categories (a), (b), and (c) are the vertices of the triangle. The edge (ab) can be thought of as T-duality; (bc) can be thought of as microlocalization; and (ac) is the coherent-constructible correspondence. The edges are based on work of many authors, including (but not limited to) joint work with Nadler (bc) and Fang, Liu and Treumann (ac).

To be concrete, the edge (ac) is based on the familiar assignment of a polytope to an ample line bundle on a toric variety – e.g., the hyperplane bundle on projective n -space gives a primitive simplex in n dimensions.

1:10 p.m.
Math 520
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