

Short Research Talks

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*Title: Tropical Lagrangians in Mirror Symmetry*

Abstract: Mirror symmetry is a duality which interchanges the symplectic geometry on a manifold  $X$  with the complex geometry on a mirror manifold  $Y$ . Under this duality, Lagrangian submanifolds of  $X$  should be compared to complex submanifolds of  $Y$  and vice versa. More precisely, the Fukaya category of  $X$  (whose objects are Lagrangian submanifolds) should be compared to the category of coherent sheaves of  $Y$ . Strominger, Yau and Zaslow proposed a mechanism for this duality, where the symplectic geometry of  $X$  and complex geometry of  $Y$  are mutually compared to the affine geometry of a space  $B$ . This  $B$  is the base of a Lagrangian torus fibration on  $X$  (and a dual Lagrangian torus fibration on  $Y$ .) In this talk, we will show how tropical varieties on  $B$  can be lifted to Lagrangian submanifolds of  $X$ , and how this fits into the mirror symmetry framework.