

1064-55-63

Eric Zaslow* (zaslow@math.northwestern.edu), 2033 Sheridan Road, Evanston, IL 60208.

Ribbon Graphs and Mirror Symmetry I.

The moment map of the complex projective plane is a triangle. Generalizing this familiar observation somewhat, I will describe a correspondence between equivariant coherent sheaves on toric varieties and polyhedrally constant sheaves on vector spaces. Specializing to one dimension, I will then describe how to assign a category to a ribbon graph by appropriately gluing sheaves on the real line.

The ribbon graph category is conjecturally equivalent to the Fukaya category of the Riemann surface described by the graph. A glued version of the correspondence above allows us to prove that the ribbon graph category is equivalent to the category of coherent sheaves on a “mirror” algebraic curve.

I will develop the necessary mathematics from a *very* simple example.

This talk is based on joint work with Bohan Fang, Chiu-Chu Melissa Liu, Nicolo’ Sibilla and David Treumann. (Received August 25, 2010)