

This submission is for the invited session on Geometry organized by Miguel Abreu.

Special Lagrangians and Lagrangian mean curvature flow

Gonçalo Oliveira¹,

¹ Universidade Federal Fluminense

Building on conjectures of Richard Thomas and Shing-Tung-Yau, together with the definition of Bridgeland stability conditions, a recent article by Dominic Joyce proposes to use Lagrangian mean curvature flow to “decompose” certain Lagrangian submanifolds into simpler volume minimizing Lagrangians called special Lagrangians. In this talk, I will report on joint work in progress with Jason Lotay to prove parts of Dominic Joyce’s program for certain symmetric hyperKähler 4-manifolds. While the existence of the so-called Bridgeland stability conditions on Fukaya categories remains an important but difficult problem related to the existence of certain abstract algebraic structures of these categories, our work provides concrete geometric interpretations for many such algebraic notions.