

The homological mirror symmetry conjecture predicts a duality, expressed in terms of categorical equivalences, between the complex geometry of a variety X (the B side) and the symplectic geometry of its mirror object Y (the A side).

Motivated by this, we study a series of singular surfaces (called log del Pezzo). I will describe the category arising in the B side, using the McKay correspondence and explicit birational geometry. I will discuss some results on the A side, focusing on the special case of a smooth degree 2 del Pezzo surface. This is joint work with Giulia Gugiatti.