

# Stanford Algebraic Geometry — Seminar —

## WALL-CROSSING IN THE DERIVED CATEGORY OF A $K3$ SURFACE

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### Abstract

Wall-crossing is a phenomenon associated to families of stability conditions (usually on coherent sheaves). It occurs nearby a critical point for the family, for which there exist semi-stable but not stable objects. Moduli of stable objects on either side of the wall are (typically) related by some sort of birational transformation (flip). If  $S$  is a  $K3$  surface with  $\text{rk}(\text{Pic}(S)) = 1$ , then there is no possibility for the “usual” wall-crossing by varying the polarization, yet the birational transformation on moduli defined by the Fourier-Mukai transform can often be understood as a wall-crossing for a family of Bridgeland stability conditions on the moduli of the derived category of the  $K3$  surface. I will carefully describe a sequence of wall-crossings that starts with the F-M transform flop.

Friday, April 14

3:15 p.m.

Room 383-N

<http://math.stanford.edu/~vakil/s0506/>