

# SQUARE ROOT EULER CLASSES AND COUNTING SHEAVES ON CALABI-YAU 4-FOLDS

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I will explain a nice characteristic class of  $SO(2n, \mathbb{C})$  bundles in both Chow cohomology and K-theory, and how to localise it to the zeros of an isotropic section. This builds on work of Edidin-Graham, Polishchuk-Vaintrob, Anderson and others. This can be used to construct an algebraic virtual cycle (and virtual structure sheaf) on moduli spaces of stable sheaves on Calabi-Yau 4-folds. It recovers the real derived differential geometry virtual cycle of Borisov-Joyce but has nicer properties, like a torus localisation formula. Joint work with Jeongseok Oh (KIAS).