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The Geometry of Magnificent Four

jeudi 30 juin 2022 14:00 (50 minutes)

Motivated by super-Yang–Mills theory on a Calabi–Yau 4-fold, Nekrasov and Piazzalunga assigned weights to r-tuples of solid partitions (4-dimensional piles of boxes) and conjectured a formula for their weighted generating function. We define K-theoretic virtual invariants of Quot schemes of 0-dimensional quotients of O_r on affine 4-space by realizing them as zero loci of isotropic sections of orthogonal bundles. Using the Oh–Thomas localization formula, we recover Nekrasov–Piazzalunga's weights. Applying ideas from Okounkov in the 3-dimensional case, we prove Nekrasov-Piazzalunga's formula. Joint work with J. Rennemo.

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