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SU(2) channels the cancellation of K3 BPS states

The so-called BPS states in a conformal field theory with extended supersymmetry are key when assigning a geometric interpretation to the theory. Standard invariants for such theories arise from a net count of BPS, half or quarter BPS states, according to the \mathbb{Z}_2 grading into 'bosons' and 'fermions'. This allows for boson-fermion pairs of states to cease being BPS under deformation of the theory.

The talk will give a review of this phenomenon, arguing that it is ubiquitous in theories with geometric interpretation by a K3 surface. For a particular type of deformations, we propose that the process is channelled by the action of $SU(2)$ on an appropriate subspace of the space of states.

This is joint work with Anne Taormina.