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# Gauge origami, vertex operators, and equivariant DT/PT count

*Thursday, March 6, 2025 2:00 PM (1 hour)*

We present a vertex operator formalism to study equivariant DT/PT invariants of Calabi-Yau 4-folds based on the underlying quiver description of the moduli space of sheaves. This system is associated with the so-called gauge origami, involving intersecting non-compact D-branes extending in various directions. We show that (1) the generating function of the equivariant invariants is given by a correlation function (conformal block) of the corresponding vertex operators, i.e., BPS/CFT correspondence, and (2) it gives rise to geometric realisations of module structures of quantum toroidal algebras. Mostly we focus on the primary example $\mathbb{C}^4$, and will mention how to deal with more generic toric varieties. Based on joint works with G. Noshita.

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