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Fermi-gas correlators of ADHM theory and triality symmetry

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We analytically study the Fermi-gas formulation of sphere correlation functions of the Coulomb branch operators for 3d $\mathcal{N} = 4$ ADHM theory with a gauge group U(N), an adjoint hypermultiplet and l hypermultiplets which can describe a stack of N M2-branes at A_{l-1} singularities. We find that the leading coefficients of the perturbative grand canonical correlation functions are invariant under a hidden triality symmetry conjectured from the twisted M-theory. The triality symmetry also helps us to fix the next-to-leading corrections analytically.

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