

Holographic index calculation for Argyres-Douglas and Minahan-Nemeschansky theories

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We calculate the superconformal indices of the $\mathcal{N} = 2$ superconformal field theories realized on N coincident D3-branes in 7-brane backgrounds with constant axiodilaton via the AdS/CFT correspondence. We include the finite- N corrections as the contribution of D3-branes wrapped around 3-cycles in the internal space. We take only single-wrapping contributions into account for simplicity. We also determine the orders of the next-to-leading corrections which we do not calculate. The orders are relatively high, and we obtain many trustable terms. We give the results for $N = 1, 2, 3$ explicitly, and find nice agreement with known results.

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