

Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

CLUSTER OF EXCELLENCE
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WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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Ensemble averages of Z_2 orbifold classes of Narain CFTs

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In this work we study families of Z_2 orbifolds of toroidal conformal field theories based on both factorizable and non-factorizable target space tori. For these classes of theories, we analyze their moduli spaces, and compute their partition functions. Building on previous work, we express the calculated partition functions in terms of suitable Siegel-Narain theta functions that allow us to determine their ensemble averages. We express the derived averaged partition functions of the studied families of conformal field theories in a manifest modular invariant finite sum of products of real analytic Eisenstein series. We speculate on a tentative holographic three-dimensional dual bulk interpretations for the considered Z_2 orbifold classes of ensembles of conformal field theories.

Based on arXiv:2403.02976 with Stefan Forste, Hans Jockers, Joshua Kames-King and Ida G. Zadeh.

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