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Schur index in closed-form and free fields

Thursday, 26 August 2021 14:30 (30 minutes)

Flavored Schur indices of 4d N=4 SCFTs encode many crucial information of the associated VOAs. For Lagrangian theories, the indices can be written as a multi-contour-integral of one-loop factor Z. In this talk, we will show that for 4d N=4 theories, some special residues of Z coincide with the free field characters of the bcβγ systems, proposed by Bonetti, Meneghelli and Rastelli, that realize the associated VOAs. These residues serve automatically as additional solutions to the flavored modular differential equations. This result inspires an elementary method to rewrite the Schur indices in closed-form, in terms of finite sums and products of theta functions and their derivatives.

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