Contribution ID: **76**   Type: **not specified**

Boundaries, Vermas, and Factorisation

Wednesday 16 December 2020 14:30 (30 minutes)

I will discuss a recent work on the factorisation of closed 3-manifold partition functions and indices of 3d $\mathcal{N} = 4$ gauge theories. The building blocks are hemisphere partition functions equipped with a class of UV $\mathcal{N} = (2, 2)$ boundary conditions that mimic the presence of isolated vacua at infinity. Via the state-operator correspondence, these count local operators supported on a $(2, 2)$ boundary condition on a plane. A subset of these operators are boundary Higgs and Coulomb branch operators, which form lowest weight Verma modules over the quantised bulk Higgs and Coulomb branch chiral rings. We show that certain limits of the hemisphere partition functions compute their characters. We find that the equivariant supersymmetric Casimir energy encodes the boundary 't Hooft anomaly, and also plays the role of highest weights. Applying these results to factorisation then leads to various "IR formulae" for partition functions on closed 3-manifolds in terms of these Verma characters.

Would you be interested in receiving feedback on your talk?

Yes

Will you be pre-recording your talk?

No

Length of talk

15-25 minutes

Are you happy for your talk to be recorded?

Yes

Author: ZHANG, Daniel (University of Cambridge)

Presenter: ZHANG, Daniel (University of Cambridge)

Session Classification: Parallel Stream 2