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Black hole entropy from superconformal indices and a glimpse of black holes in $\text{AdS}_5 \times T^{1,1}$

Wednesday, December 16, 2020 12:30 PM (30 minutes)

The large N limit of the four-dimensional superconformal index has been computed and successfully compared to the entropy of a class of AdS_5 black holes only in the particular case of *equal* angular momenta. Using the Bethe ansatz formulation of the index, we found a particular universal contribution to the sum over Bethe vacua that correctly leads to the entropy of BPS Kerr–Newman black holes in $\text{AdS}_5 \times S^5$ for *arbitrary* values of the conserved charges, thus completing the microscopic derivation of their microstates. We also consider theories dual to $\text{AdS}_5 \times \text{SE}_5$, where SE_5 is a Sasaki–Einstein manifold. In particular, we explicitly constructed the near-horizon geometry of as yet unknown BPS Kerr–Newman black holes in $\text{AdS}_5 \times T^{1,1}$. The entropies of these black holes were computed using the attractor mechanism and we found complete agreement with predictions from the index.

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

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