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## Entropy functions for supersymmetric AdS Black Holes

We consider supersymmetric  $AdS_3 \times Y_7$  solutions of type IIB and  $AdS_2 \times Y_9$  solutions of  $D = 11$  supergravity. These can arise as the near horizon limit of black strings in  $AdS_5$  and black holes in  $AdS_4$  spacetimes, respectively. We explain how novel extremisation techniques enable one to compute physical observables without explicitly solving Einstein equations. This allows one to identify infinite new classes of  $AdS_3/d=2$  SCFT pairs, as well obtain a microstate counting interpretation for infinite classes of supersymmetric black holes in  $AdS_4$ . A sub-class of examples correspond to branes wrapping certain two-dimensional orbifolds known as spindles and this has opened up a new direction in AdS/CFT with novel connections to accelerating black holes.

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