AdS$_3$ and AdS$_2$ Magnetic Brane Solutions

We investigate AdS$_3$ and AdS$_2$ magnetic brane solutions within the consistent truncation of AdS$_5 \times S^5$ supergravity. The AdS$_3$ solution extends earlier work by allowing a general embedding of the magnetic $U(1)$ in $SO(6)$. We determine the ratio of strong- and weak-coupling entropies as a function of this embedding. Further, by considering crossed magnetic fields in different $U(1)$'s we are able to construct a solution that runs from AdS$_5$ in the UV to AdS$_2 \times R^3$ in the IR. We find the notable result that there is a zero temperature entropy at strong coupling but not at weak coupling. We also show that the AdS$_2$ solution and at least some of the AdS$_3$ solutions are stable within the truncation.

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