

A Consistent Holographic Analysis of Anomaly-induced Charge Transport in the D3/D7 Model

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We propose a scheme to correctly incorporate the contribution of the chiral anomaly in the D3/D7 model to calculate chiral transport phenomena. To ensure the D7-brane wraps

S^5 appropriately and the Wess-Zumino term is switched on, we allow the D7-brane to rotate in the compactified extra directions and perform the analysis accordingly. To demonstrate that this calculation procedure works well, we specifically compute the magnetoresistance in the D3/D7 model. We find that a finite axial chemical potential is realized and the negative magnetoresistance is enhanced by the anomaly contribution.

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