

The entanglement entropy of the Schwarzschild black hole

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Abstract

We study the entanglement entropy of the Schwarzschild black hole in the presence of a background small black hole. We find that the black hole in the presence of the background small black hole induces an entanglement entropy that is proportional to the total entropy. This result, obtained in the presence of the background small black hole, is in agreement with the results obtained in previous studies.