

# Universal construction of black hole microstates

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It has been recently proposed that it is possible to build microstates for two-sided Schwarzschild black holes by inserting backreacting shells of matter trapped behind the horizon. This procedure seemingly produces an arbitrarily large number of different microstates, creating a tension with the Bekenstein-Hawking entropy calculation which is solved by showing that the states are not orthogonal due to non-perturbative gravitational effects in the form of Euclidean wormholes. In this talk, I will argue that this construction is completely universal, and it can be extended to charged and rotating black holes, including the extremal and near-extremal solutions. Furthermore, the set-up allows to account for all quantum corrections found in previous computations of the Gibbons-Hawking partition function.

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