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Black Holes in the Dual of Quantum Mechanics

Friday 20 January 2023 11:30 (1 hour)

I will motivate and study a holographic duality between on one hand a theory of superconformal quantum mechanics, and on the other, M-theory on a particular background. I will exhibit a broad class of black hole solutions, whose entropy must be captured by a degeneracy of states in the quantum mechanics. Through an asymptotic study of the superconformal index in the supergravity regime, I will provide such a microstate counting for those black holes that are supersymmetric. I will finally speculate on the role of dualities of this form in understanding the basic building blocks of holography for higher-dimensional CFTs

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