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# Space-time emergence and machine learning

The work explores the emergence of space-time from tensor networks. Following a known prescription we construct a bulk 2D Ising model, whose free energy captures the partition function of a random tensor network, reproducing the entanglement entropy of particular boundary theories. We assume the Ryu-Takayanagi formula, and the Ising model couplings are obtained with a machine learning optimization algorithm. We explore the networks associated to the geometries of $AdS_3$ and the one of the Bañados, Teitelboim, and Zanelli (BTZ) Black Hole.

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