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Abstract for an Invited Paper
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Einstein's Equations From Entanglement

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I will outline a path by which a semi-classical geometry obeying Einstein's equations emerges holographically from entanglement in certain quantum many-body systems. Although some challenges remain, I will argue that the core concepts are in place. I will discuss in particular two crucial results, one establishing the existence of tensor networks for a wide class of quantum many-body systems, and one showing how the equivalence principle is encoded in the universality of entanglement. The first result establishing the existence of tensor networks has independent interest for the classical simulation of quantum many-body physics.