Islands in the Randall-Sundrum model

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Recent progress in our understanding of the black hole information paradox has lead to a new prescription for calculating entanglement entropies, which involves special subsystems in regions where gravity is dynamical, called *quantum extremal islands*. We present a simple holographic framework where the emergence of these islands can be understood in terms of the standard Ryu-Takayanagi prescription. Our setup describes a boundary CFT coupled to a defect, which are dual to global AdS containing a codimension-one brane. Through the Randall-Sundrum mechanism, an effective description of the brane is given by gravity on an AdS background coupled to two copies of the boundary CFT. We show that the physics of islands here is simply a consequence of the well-understood phase transition of RT surfaces, an island appearing whenever the RT surface crosses the brane.

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