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Corner entanglement as a probe of quantum criticality[1] WILLIAM WITCZAK-KREMPA, Harvard Univ, PABLO BUENO, KU Leuven, ROBERT C. MYERS, Perimeter Institute — The entanglement entropy in many gapless quantum systems in 2+1D receives a contribution from corners in the entangling surface. It is characterized by a universal function $a(\theta)$ that depends non-trivially on the corner opening angle θ. Focusing on a large family of quantum critical theories with emergent Lorentz invariance (CFTs), we argue that the smooth limit $a(\theta \approx \pi)$ is entirely determined by the energy-density or stress tensor 2-point function coefficient. This explains recent results obtained via cutting edge simulations on the quantum critical Ising, XY and Heisenberg models. We also show how to extract the full thermal entropy of the quantum critical system using corner entanglement of the groundstate alone. ** Bueno, Myers, WK, Phys. Rev. Lett. (2015)

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