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Corner Contributions to the Entanglement Entropy of Strongly Interacting Systems in 2+1 Dimensions EDWIN MILES STOUDENMIRE, Perimeter Institute for Theoretical Physics, PETER GUSTAINIS, RAVI JOHAL, University of Waterloo, STEFAN WESSEL, RWTH Aachen University, ROGER MELKO, University of Waterloo, Perimeter Institute for Theoretical Physics — In D=2+1 quantum critical systems, the entanglement entropy of a region with a sharp corner in its boundary contains a subleading logarithmic scaling term with a universal coefficient. In certain cases it is known that this coefficient captures the number of low-energy degrees of freedom in the associated field theory. Using a combination of density matrix renormalization group and numerical linked cluster calculations to isolate the corner coefficient for critical systems in the O(N) Wilson-Fisher universality class, we observe a striking confirmation of the unversality of this quantity and find that, to leading order, the corner coefficient is proportional to the number of field components N.

Edwin Stoudenmire
Perimeter Inst for Theo Phys

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