Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

**Universal entanglement scaling at interacting critical points in 2+1.** BOHDAN KULCHYTSKYY, University of Waterloo, ROGER MELKO, University of Waterloo / Perimeter Institute for Theoretical Physics — Entanglement entropy has emerged as new a paradigm for the study and characterization of condensed matter systems. The scaling of entropy with the size of the entangled region can reveal universal features of the continuum theory which underlies a lattice model. We perform large-scale Monte-Carlo simulations of a 2+1 Ising model tuned to its critical temperature, belonging to the universality class of the Wilson-Fisher fixed point. We study the universal shape-dependent contribution to the entanglement entropy between two complementary cylindrical regions. In the thin strip limit, we extract a universal proportionality constant and relate it to the value of the entanglement entropy associated with sharp corners in the entangling surface.

Bohdan Kulchytskyy
University of Waterloo

Date submitted: 11 Nov 2016 Electronic form version 1.4