

Abstract Submitted  
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**Edge States of Quantum Antiferromagnets**<sup>1</sup> JOSÉ HOYOS, S. CHANDRASEKHARAN, H. U. BARANGER, Duke University — We investigate the edge states of spin systems in the Affleck-Kennedy-Lieb-Tasaki (AKLT) phase. Edges of correlated systems may show novel lower dimensional physics (as in quantum Hall edge states) and have recently garnered increasing experimental attention. Here we study spin-1 systems using the directed-loop quantum Monte Carlo technique. Depending on the configuration and parameters, even though the bulk system has a spin (Haldane) gap, the edge states can be gapless and described by an effective Luttinger liquid. We focus on the behavior of the edge states when the bulk undergoes a quantum phase transition from the AKLT to the Néel phase.

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