

Abstract Submitted
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Determination of Luttinger parameters for $c=2$ theories¹ OLABODE SULE, HITESH CHANGLANI, SHINSEI RYU, Univeristy of Illinois at Urbana Champaign — We consider critical $SU(3)$ symmetric spin chains with additional interactions relevant to the physics of the Haldane spin chain. We provide evidence for the mapping of these spin chains to free boson theories with topological terms and central charge $c = 2$ [1]. Our approach is based on non-abelian bosonization[2] together with numerical confirmation using exact diagonalization and the density matrix renormalization group algorithm. Our results generalize what is known for the spin-1/2 XXZ model[3]. Using these results we calculate all four parameters that describe the physics of two coupled Luttinger liquids as a function of the parameters of the lattice model. [1] O. Sule, H.J. Changlani, S. Ryu (in preparation) [2] C. Itoi, M.H. Kato, Phys. Rev. B 55, 8295, 1997 [3] S. Furukawa, V. Pasquier, J. Shiraishi, Phys. Rev. Lett. 102, 170602 (2009)

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