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Reconstruction of Chiral Edge States in Magnetic Chern Insulators RYO OZAWA, MASAFUMI UDAGAWA, YUTAKA AKAGI, YUKITOSHI MOTOME, Dept. of Appl. Phys., Univ. of Tokyo — Surface and interface properties of spin-charge coupled systems are one of the central issues not only in fundamental physics but also in application to spintronics. In particular, in magnetically-ordered insulators with topological nature, topologically protected surface states may emerge. On the other hand, the magnetic state near the surface suffer from a reconstruction due to the local symmetry breaking, which may alter the surface states. It is of great interest to clarify how such a reconstruction occurs in a microscopic way. For this purpose, we consider an example of such magnetically-ordered topological insulators, i.e., a spin scalar chiral ordered phase characterized by a nonzero Chern number, recently discovered in the classical Kondo lattice model on a triangular lattice[1]. We investigate this state numerically in finite-size systems with open edges by large scale simulation. As a result, we find that ferromagnetic spin correlations are induced near the edges. Surprisingly, at the same time, the chiral edge current is enhanced. We also clarify that the relation between penetration depth and bulk energy gap. [1] Y. Akagi and Y. Motme, J Phys. Soc. Jpn. **79**, 083711 (2010).

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