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Quantum Fluctuation Effect on a Spin Scalar Chiral Ordering in Frustrated Kondo Lattice System YUTAKA AKAGI, MASAFUMI UDAGAWA, YUKITOSHI MOTOME, Dept. of Appl. Phys., Univ. of Tokyo — Recently, noncoplanar spin configurations with spin scalar chirality have drawn considerable attention as an origin of the anomalous Hall effect. As a typical example, a scalar chiral state with noncoplanar four-sublattice magnetic ordering was stabilized through the spin-charge coupling in a Kondo lattice model on a triangular lattice at 1/4 and 3/4 fillings [1,2]. In previous studies however, localized moments are approximated as classical spins. It is interesting to ask how quantum spin fluctuations affect the nontrivial chiral order and electronic state of the system. Here, we examine the effect of quantum fluctuations by the spin-wave approximation with introducing the Holstein-Primakoff transformation to the localized spins. As a result, we find that the four-sublattice order is fragile against quantum fluctuations at 3/4 filling, whereas it remains robust at 1/4 filling. We discuss the magnon excitations in the spin-charge coupled system in details. We also discuss the quantum correction on the thermal Hall effect. [1] Y. Akagi and Y. Motome, J. Phys. Soc. Jpn. **79**, 083711 (2010). [2] Y. Akagi, M. Udagawa, and Y. Motome, Phys. Rev. Lett. **108**, 096401 (2012).

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