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Dynamical structure factor of spin 1/2 Heisenberg antiferromagnet on Kagome lattice¹ ZHIHAO HAO, PAULA MELLADO, OLEG TCHERNYSHYOV, Department of Physics and Astronomy, Johns Hopkins University — The ground state of spin 1/2 anti-ferromagnet on kagome lattice can be viewed as a collection of small and heavy bound pairs of fermionic spinons [1]. Magnetic excitations of the model correspond to breaking such pairs into their constituents. In the current work, the dynamical structure factor is calculated for low energy magnetic excitations just above the spin gap. It is observed that the structure factor is similar to the one of an isolated dimer due to the tightness of the bound state. The result is consistent with experiments done in Helton etal [2] and M.A. de Vries etal [3].

[1] Zhihao Hao and Oleg Tchernyshyov, Phys. Rev. Lett. 103, 187203.

[2] J. S. Helton etal, Phys. Rev. Lett. 98, 107204.

[3] M. A. de Vries etal, arXiv:0902.3194.

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