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Novel solid phase in the frustrated Kagome lattice XXZ model¹ GUANG YU SUN, YAN QI QIN, YAN CHENG WANG, ZI YANG MENG, Institute of Physics, Chinese Academy of Sciences, Beijing — Taking large-scale quantum Monte Carlo simulations, we investigate the phase diagram of frustrated Kagome lattice XXZ model. To overcome the extensive degeneracy in the low-energy manifold, advanced plaquette update scheme combined with geometric consideration of probably balance has been employed. At the extend magnetization m=1/3, we found a novel solid phase with sqrt(12)xsqrt(12) structure, hence verified the theoretical prediction from perturbative calculation in the limit of quantum dimer model. The (nature) property of transition from the solid to the ferromagnetic ordered phase is also determined.

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> Guang Yu Sun Institute of Physics, Chinese Academy of Sciences, Beijing

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