Dear Editors,

We are transferring our manuscript entitled “Comprehensive study of the global phase diagram of the J-K-Г model on a triangular lattice” from Physical Review X for your consideration in Physical Review B.

Our manuscript was first submitted to PRX but was rejected by the editors. However, the editors think our work “presents a thorough and diligent analysis of the global phase diagram of the J-K-Г model on a triangular lattice” and “it is technically sound and well-done work which will nicely complement earlier studies in this field.” According to the editors’ opinion, our paper “will be a fine contribution to another journal of the Physical Review family”, so we choose to transfer our manuscript to Physical Review B.

In this paper, we provide a study of the triangular-lattice J-K-Г model in its full parameter space using a combination of the exact diagonalization, classical Monte Carlo and analytic methods, with an emphasis on the effects of the Г term. We believe it is the first comprehensive and extensive study of the J-K-Г model on the triangular lattice. We find that there are five quantum phases in the limit of Г=0. Due to the introduction of the Г term, five new phases emerge including two ferromagnetic phases, one stripe, one modulated stripe and a possible Z2 quantum spin liquid. We also elaborate that the pure Г model has a ferromagnetic ground state and the antiferromagnetic Kitaev model a stripe ground state, which are selected by the order-by-disorder mechanism from the degenerate classical ground states. Our study paves the way for future studies of a large group of triangular transition-metal materials with an appreciable spin-orbit coupling and electronic correlations, which is a rapid growing field currently.

Therefore, we believe this work will draw a broad readership of Physical Review B. We hope you share our excitement in these results and would appreciate your consideration of this manuscript for initiating the peer-review process.

Yours sincerely,

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