

5th May 2022

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## Application for Financial Support

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### Committees and Organization

The 39th annual Symposium on Lattice Field theory,  
University of Bonn, Forschungszentrum Jülich, and University of Wuppertal

Dear Sirs,

I have learned that there is financial support for the conference fee on the website of “The 39th International Symposium on Lattice Field Theory.” Therefore, I submit this application for financial support for the conference fee.

I am working at the Joint Institute for Nuclear Research in Dubna in the Russian Federation and studying relations among chiral symmetry breaking, instantons, and magnetic monopoles by numerical calculations in lattice gauge theory [arXiv: 2203.11357].

I would like to talk about the effects of strong magnetic fields on chiral symmetry breaking, quark masses, and hadron spectroscopy. The uniform magnetic fields are added to configurations with  $N_f = 2+1$  dynamical quarks at the physical pion mass, and the configurations are generated by the Pisa group under the research collaboration between Dubna and Pisa. I evaluate the chiral condensate, decay constants, light quark masses, and light meson masses using the eigenvalues and eigenvectors of the overlap Dirac operator, which are computed from these configurations, and estimate the effects of the strong magnetic field on these observables. In my talk, I will show the preliminary results concerning the effects of strong magnetic fields on the eta-prime meson mass.

Unfortunately, I do not have any funding to pay the conference fee and travel expenses. I will pay everything by myself to attend this conference. Therefore, I apply for the financial support for the conference fee.

Last, I would appreciate your kind consideration.

Sincerely yours,

5th May 2022 長谷川 将康 Hasegawa Masayasu

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