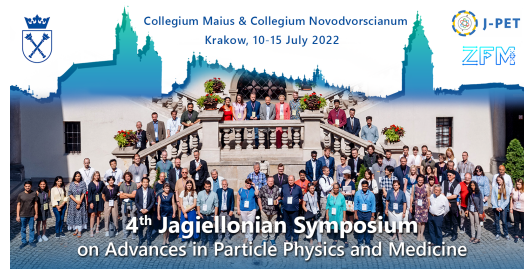


## 4th Jagiellonian Symposium on Advances in Particle Physics and Medicine



Contribution ID: 276

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### Invited talk: Study of the eta-prime meson in nuclei in the LEPS2/BGOegg experiment

*Tuesday, 12 July 2022 16:10 (20 minutes)*

A large mass reduction of the  $\eta'(958)$  in nuclei is expected in several theoretical models. If there is large mass reduction, an  $\eta'$  meson and a nucleus can form a bound state. We investigated the  $\eta'$ -nucleus system in the LEPS2/BGOegg experiment. To search for the  $\eta'$ -nucleus bound state, we carried out the missing mass spectroscopy of the  $^{12}\text{C}(\gamma, p)$  reaction. To suppress background events from mult-meson productions, the one nucleon absorption decay products were simultaneously measured for the first time. In addition, we also carried out the simultaneous measurement of escaping  $\eta'$  mesons from nuclei. We will report the  $\eta'$ -nucleus optical potential evaluated by using both data. We will also show the preliminary results of the direct measurement of  $\eta'$  mass spectra from the  $\eta' \rightarrow \gamma\gamma$  decay in nuclei.

#### Publication agreement (CC BY 4.0)

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