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The radiative decay width measurement of the η -meson at GlueX.

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The PrimEx-eta experiment at Jefferson Lab is conducting a new measurement of the radiative decay width of the η -meson via the Primakoff effect from the η -meson photoproduction off a helium nucleus. The produced η -meson can be reconstructed by detecting either $\eta \rightarrow 2\gamma$ or $\eta \rightarrow 3\pi$ decays. A precise measurement of $\Gamma(\eta \rightarrow \gamma\gamma)$ will improve the calculation of all η -meson partial decay widths, particularly enhancing the understanding of the hadronic contribution to the muon magnetic moment from lattice QCD. Furthermore, it will provide critical input to determine the η - η' mixing angle and the light quark mass ratio in a model-independent manner. The status of the data analysis and its challenges will be presented in this talk.

session

K. Precision and New Physics

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