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

The PrimEx-eta experiment at Jefferson Lab is aiming to measure the radiative decay width of the η -meson with a 3.2% precision. This projected accuracy will ameliorate the calculation of all η -meson partial decay widths and in particular the hadronic contribution to the muon magnetic moment from lattice QCD. It will provide critical input to determine the η - η' mixing angle and the light quark mass ratio model independently. The first run was performed with the GlueX experimental setup in Hall D in 2019 and the second run in fall 2021. We will discuss the status of the experiment and how the radiative decay width is extracted via the Primakoff effect from the η -meson photoproduction off a helium nucleus. We will also discuss the measurement of Compton scattering off an atomic electron, which is used to control experimental systematics, including the detection efficiency, the luminosity, and the measurement stability over time.

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