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Measurement of the photoproduction cross section for $\gamma p \to \phi\pi^+\pi^- p$ and search for the $Y(2175)$ at GlueX

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The $Y(2175)$, recently renamed to $\phi(2170)$, is one of the rare exotic candidates connected to strangeonium instead of the heavier charmonium-like and bottomonium-like exotic states. Originally observed in initial-state radiation by the BaBar experiment in 2006, it is could be a strange partner of the famous charmonium-like exotic vector state $Y(4260)$. Various interpretations exist in the literature, such as conventional strangeonium, tetraquark or hybrid state. Meanwhile, it has been seen in different experiments and decay channels. The available experimental information obtained only from e^+e^- collider experiments is,
however, not sufficient to confirm or disprove any of the proposed interpretations. Information about the production of this state in other processes is required. Using intense photon beams is especially well suited to study strangeonium-like states because of the strong coupling of the photon to $s\bar{s}$. In this talk, we report on our measurement of the production cross section of the reaction $\gamma + p \to \phi\pi^+\pi^- + p$ and the search performed for $Y(2175) \to \phi\pi^+\pi^-$ with the GlueX experiment.

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