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Charged and Neutral Pion polarizability measurement in the CPP/NPP experiments.

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Polarizability is a fundamental particle property. Measurement of pion polarizability values allows checking strict ChPT prediction. Charged and neutral pi-mesons polarizability will be extracted from the CPP and NPP experimental data using Primakoff pair production cross-section on nuclear target. The CPP/NPP experiment run at TJNAF Hall-D was conducted in the summer of 2022 and utilized a polarized photon beam with an energy range of 4.5-6.0 GeV and the lead-208 target on the upgraded GlueX experimental setup.

In this talk, we will discuss existing experiments that measured charged pion polarizability, review CPP/NPP experimental data, future plans on cross-section and polarizability of the charged and neutral pions (for the first time) extraction.

Primary author(s) : Dr. LARIN, Ilya (National Research Center (NRC) "Kurchatov Institute," Moscow, 117218, Russia.); Dr. TARASOV, Victor V (National Research Center (NRC) "Kurchatov Institute," Moscow, 117218, Russia.)

Presenter(s) : Dr. LARIN, Ilya (National Research Center (NRC) "Kurchatov Institute," Moscow, 117218, Russia.); Dr. TARASOV, Victor V (National Research Center (NRC) "Kurchatov Institute," Moscow, 117218, Russia.)

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