Contribution ID: **19** Type: **Talks**

# Moments of Angular Distribution of the K+K- System with CLAS12

*Tuesday 9 December 2025 11:30 (30 minutes)*

Since the prediction of the meson in 1935, facilities and institutions across the world have contributed to the discovery of over 200 distinct types, some of those being the well-known pions, kaons and J/Ψ. Understanding the properties of the mesons, including their spin, lifetime and mass, allows for the classification of this vast family of hadrons to be improved. This is particularly important in the case of the discovery of new or exotic mesons. In this endeavour, determining the spin is vitally important. A set of quantities known as moments of angular distributions relate the spin of a meson to the angular distributions of its decay products; furthermore, these quantities can be extracted unambiguously and directly from experimental data. The Thomas Jefferson National Accelerator Facility, also known as Jefferson Lab, located in Virginia, is home to the Continuous Electron Beam Accelerator Facility (CEBAF), which is capable of producing a high-luminosity 12 GeV electron beam. When this beam impinges on a supercooled liquid hydrogen target, electron-proton interactions result in the production of various mesons, which are then detected by the CEBAF Large Acceptance Spectrometer at 12 GeV (CLAS12). The purpose of this research is to use CLAS12 at Jefferson Lab to obtain the moments of angular distributions of mesons that decay into pairs of oppositely charged kaons.

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**Session Classification:** GlueX/CLAS: Moments