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Test Fundamental Symmetries via Precision Measurements of pi0, eta and eta Decays

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Light neutral meson decays provide a unique laboratory to probe fundamental QCD symmetries. A comprehensive Primakoff experimental program at Jefferson Laboratory (JLab) is aimed at gathering high precision measurements on the two-photon decay widths and the transition form factors at low four-momentum transfer squares of pi0, eta and eta'via the Primakoff effect. Completed experiments on the pi0 radiative decay width at JLab 6 GeV, and planned measurements of eta and eta'at JLab 12 GeV will provide sensitive probes to test the chiral anomaly and to study the origin and dynamics of chiral symmetry breaking in the confinement QCD. A preliminary result of the pi0 radiative decay width and the status of planned eta and eta'measurements will be presented.

Presenter: GAN, Liping (University of North Carolina Wilmington)

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