

HAW09-2009-000126

Abstract for an Invited Paper
for the HAW09 Meeting of
the American Physical Society

Hypernuclear and Strange Quark Programs in Jefferson Lab Halls A and C

PETE MARKOWITZ, Florida International University

The first several generations of experiments on hypernuclei and strange quark production have been completed in Jefferson Lab's Halls A and C. I will present a summary of the program showing the primary results. The wide range of results from the program has changed our understanding of both hypernuclei and strange quark electro- and photo-production. The results show that the elementary reaction is dominated by t-channel at forward angles for production of the Lambda, while s-channel dominates Sigma production. The Longitudinal response is large (approximately 50% of the Transverse), suggesting that these experiments can constrain models for the kaon form factor. On nuclear targets, good signal-to-noise ratios have been achieved with unprecedented resolutions. The reaction produces mirror nuclei to production with hadronic beams, and importantly determines the binding energies. Additionally, for the first time excited core states have been observed allowing tests of hypernuclear potentials and production models.