

## Plenary talk

A proposed U.S./China theoretical/experimental collaborative effort on baryon resonance extraction

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## 摘要

In this paper we discuss the reasons for our work towards establishing a new collaboration between Jefferson Lab (JLab) and the Institute of High Energy Physics (IHEP) in Beijing. We seek to combine experimentalists and theorists into a dedicated group focused on better understanding the current and future data from JLab and from the Beijing Electron Positron Collider (BEPC).

Recent JLab results on the extraction of single- and double-polarization observables in both the  $1\pi$ - and  $2\pi$ -channel show their high sensitivity to small production amplitudes and therefore their importance for the extraction of resonance parameters. The Beijing Electron Spectrometer (BES) at the BEPC has collected high statistics data on  $J/\psi$  production. Its decay into baryon-antibaryon channels offers a unique and complementary way of probing nucleon resonances. The CEBAF Large Acceptance Spectrometer, CLAS, has access to  $N^*$  form factors at high  $Q^2$ , which is advantageous for the study of dynamical properties of nucleon resonances, while the low-background BES results will be able to provide guidance for the search for less-dominant excited states at JLab. Moreover, with the recently approved experimental proposal Nucleon Resonance Studies with CLAS12 and the high-quality data streaming from BES-III and CLAS, the time has come for forging a new Trans-Pacific collaboration of theorists and experimentalists on NSTAR physics.

关键词 [baryon resonances, electromagnetic form factors,  \$J/\psi\$  production, CEBAF Large Acceptance Spectrometer \(CLAS\), Jefferson Laboratory \(JLab\), Beijing Electron Spectrometer \(BES\), Beijing Electron Positron Collider \(BEPC\), Institute of High Energy Physics \(IHEP\)](#)

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