

Photon-Hadron Physics With GlueX Detector at Jefferson Lab¹

A 2½ day long workshop to be held during the week of March 3, 2008 (Tentative) at Jefferson Lab to explore exciting physics beyond the core spectroscopy program of GlueX that can be done using the GlueX detector and the photon beams available in Hall D at Jefferson Lab.

I Introduction:

- The GlueX Detector and its Performance Matt Shepherd (IU) / Elton Smith (JLab)
- Detector Upgrades—A Ring Imaging Cherenkov in the Forward Region David Websdale (Imperial College London) / Christian Joram (CERN)
- Detector Upgrades—A DIRC (Detection of Internally Reflected Cherenkov light) in the Barrel Region, Blair Ratcliff (SLAC)/ Stefan Spanier (Tennessee)

II Chiral anomaly and The Primakoff Effect

- An Overview of Theory Jose Goity (Hampton & JLab)
- A PrimeX-like Experiment Ashot Gasparian (NC State) ²

III Charm Photo-Production Near Threshold

- Theory—What Do We Learn Christian Weiss (JLab)/Stan Brodsky (SLAC).
- Exclusive J/ψ Production on the Proton³ Eugene Chudakov (JLab)
- Photo-Production of $D\Lambda_c$ on the Proton and Neutron Reinhard Schumacher (Carnegie Mellon)
- J/ψ in Nuclei⁴. Zein-Eddine Meziani (Temple).

IV Exclusive Reactions at High Momentum Transfer

Topics to be covered include Real Compton scattering at high t (WACS), Exclusive Meson production at high t and Inverted deeply-virtual Compton scattering (DVCS).

- Theory Markus Diehl (DESY)
- Experiment Charles Hyde-Wright (ODU & Clermont-Ferrand)/Al Nathan (UIUC).

¹The title that went in on the JSA Proposal.

²Send invitation to all three PrimeX spokespersons with request to name the speaker.

³Emphasis on the gluon GPD, coherent multi-gluon production.

⁴Bound States and Color van-der-Waals Forces.

V Nuclear Effects in Photo-Production

Topics to be covered include Color transparency in high- t reactions and Hadron attenuation and medium effects.

- Theory Mark Strikman (Penn State)/A. Accardi (Hampton & JLab)
- Experiment D. Dutta (Mississippi State) N. Bianchi (Frascati) P. DiNezza (Frascati).

VI Spectroscopy

This section would cover both mesons and baryons. The Baryon part would focus on what could be done beyond what will be possible in the 6GeV program, particularly with linearly polarized photons. It would also include Hyperon and Cascade baryons. The meson section would focus on things that are not fully addressed in the current GlueX program. Not all the following topics need necessarily be covered.

- Nucleon Resonances An EBAC person?
- Hyperon and Cascade Baryons Veronique Ziegler
- Excited Vector Mesons Sandy Donnachie
- Radiative Decays Frank Close
- The Spectrum of Kaons Bill Dunwoodie
- Exotics Ted Barnes/Frank Close.
- What is known in Photo Production Alex Dzierba
- The Excited Spectrum and Connections to QCD
- Lattice Prospects Craig McNeile/Chris Michael

VII Other Physics

This session would we an open session where submitted talks could be presented.