PWA 2011

Sixth International Workshop on Pion-Nucleon Partial-Wave Analysis and the Interpretation of Baryon Resonances

23–27 May, 2011 — Washington, DC, U.S.A.

Outlines of Discussion Sessions

The following paragraphs outline the respective points of departure for the discussion sessions. The listed issues are not necessarily complete and they are not intended to strictly limit the discussion topics. Participants are encouraged to raise related issues that may not be mentioned herein. To visually support their arguments, participants in the discussions may provide up to two slides as pdf files (formatted for screen projection) beforehand to the conveners of the respective sessions. (The two-slide limit is to be strictly enforced, and participants will be actively discouraged from abusing this opportunity to start a five-minute mini-talk.)

Session 1: Effective Lagrangian approaches [Monday, 16:00–17:00]

The use of effective Lagrangians to describe hadronic or electromagnetic degrees of freedom must be confronted by constraints required by quantum field theory. Among these are Lorentz invariance of the S matrix, discrete symmetries (PCT), crossing symmetry, global symmetries (exact and approximate), unitarity, and electromagnetic gauge invariance (Ward-Takahashi identities). The application of the effective Lagrangian approach inevitably incurs the truncation, approximate implementation, or neglect of some subset of the constraints. What are the consequences of these truncations, approximations, or unsatisfied constraints. Is it possible to quantify the systematic errors in calculated observables and extracted resonance parameters associated with these limitations? How are resonance parameters extracted in effective Lagrangian techniques related to quantities calculated in lattice QCD?

Session 2: Model dependencies in extracted resonance parameters [Tuesday, 16:30–17:30]

Hadronic resonance parameters are extracted from both effective Lagrangian approaches and parametrizations (SAID, MAID, BoGa, etc.) of amplitudes. Modeling is an inevitable aspect of both the extraction and description of experimental data. On the experimental side, modeling is required owing to limitations in observed experimental knowledge in terms of, for example, kinematics, reaction channels, and polarization observables. What are the main constraints on the theoretical side that make some degree of modeling necessary? What methods and approaches offer the least model-dependent statements about extracted hadronic resonance parameters? What experimental data are most important for constraining models and parametrizations?

Session 3: The future of hadron databases [Thursday, 16:00–17:00]

The *Review of Particle Properties* (RPP) of the *Particle Data Group* (PDG) is the repository that is currently widely identified as an authority on the collection and status of hadronic resonance parameters. What are the future possibilities and opportunities for the hadron community with respect to the RPP? As the focus of the PDG is centered on high-energy physics, are there opportunities to reinvigorate its medium-energy hadronic component? Is there a need for a dedicated repository of hadronic resonance data? What relation to the RPP would (or should) such a repository possess?