



Contribution ID: 79

Type: **Talk**

Chiral two-nucleon dynamics, analyticity and dispersion relations

Tuesday, June 30, 2015 2:30 PM (15 minutes)

Nucleon-nucleon interaction is studied using relativistic form of the chiral Lagrangian. Partial-wave amplitudes are computed in chiral perturbation theory at next-to-next-to-leading order in the subthreshold region. The most general constraints set by analyticity and unitarity are implemented to extrapolate the amplitudes into the physical region using the method developed in Refs. [1,2]. Empirical phase shifts are described up to laboratory energies $T_{\text{lab}} \approx 250$ MeV. The issues related with renormalization and convergence of perturbation theory are investigated.

[1] A. Gasparyan, M. F. M. Lutz, Nucl. Phys. A848 (2010) 126-182.

[2] A. M. Gasparyan, M. F. M. Lutz and E. Epelbaum, Eur.Phys. J. A 49, 115 (2013)

Primary author: GASPARYAN, Ashot (Ruhr University, Bochum)

Co-authors: Prof. EPELBAUM, Evgeny (Ruhr University of Bochum); Prof. LUTZ, Matthias (GSI, Darmstadt)

Presenter: GASPARYAN, Ashot (Ruhr University, Bochum)

Session Classification: Parallel Session 3 - Few-Body Physics WG

Track Classification: Few-Body Physics Working Group