

International Workshop on Partial Wave Analyses and Advanced Tools for Hadron Spectroscopy



Contribution ID: 26

Type: **not specified**

Space-like and time-like electromagnetic baryonic transitions (Trento Workshop)

Thursday, March 16, 2017 12:30 PM (10 minutes)

The study of electromagnetic transitions opens a window into the very nature of the strong interaction. And, indeed, such a study of how a ground-state nucleon transitions to an excited state, over a broad range of q^2 , will provide keen insight into the evolution of how dynamically-generated masses emerge from the asymptotically-free, nearly massless quarks of perturbative QCD as well as provide information on the ancillary effects from the meson-baryon cloud. The space-like ($q^2 < 0$) region has been explored more intensively, particularly at JLab, but efforts have also begun in studying the time-like ($q^2 > 0$) region at GSI. We are living in exciting times whereby near-future prospects exist in extracting high-quality data in both the space-like and time-like regimes (JLab12 and FAIR, for example). We shall present the conceptual framework of an upcoming ECT meeting entitled *Space-like and time-like electromagnetic baryonic transitions*, which will convene in Trento, Italy from 8-12 May 2017 (<http://www.ectstar.eu/node/2220>). This ECT workshop will bring together several disparate experimental and theoretical communities and thereby will serve to help in making the very first steps towards a much needed consistent description spanning these two kinematical regimes in q^2 . These discussions at the ECT* meeting will further include photoproduction measurements (ELSA, JLab, LEPS, and MAMI), wherein the $q^2 = 0$ point anchors the connection between space-like and time-like regions and meson-beam data (GSI, FAIR, and J-PARC) and amply complements the requisite information for baryon spectroscopy. Finally, studies of in-medium vector meson spectral function modifications, which are related to the electromagnetic transitions in the time-like region will also be addressed.

Primary author: Prof. COLE, Philip (Idaho State University)

Co-authors: Dr RAMSTEIN, Béatrice (Institut de Physique Nucléaire d'Orsay); SARANTSEV, Andrey (Rheinische Friedrich-Wilhelms-Universität Bonn)

Presenter: Prof. COLE, Philip (Idaho State University)

Session Classification: Session

Track Classification: Topic 5: Future Directions and Goals for Hadron Spectroscopy