

Service de Physique Nucléaire



Séminaire

le vendredi 5 janvier 2007 à 11h

CEA-Saclay DSM/DAPNIA/SPhN, Orme des Merisiers Bât. 703 Salle 135

Learning about nucleon resonances using a coupled channel framework

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The extraction and interpretation of the properties of nucleon resonances from experimental data requires a sound reaction theory to take into account, at least, the intermediate excitation of meson-baryon states.

I will review the dynamical coupled channel model and its application to the study of several reactions, πN scattering, photo and electro excitation of the Δ resonance and photoproduction of $K^+ \Lambda$. All of these are reactions where resonances play an important role and where their properties need to be extracted and properly interpreted. Understanding the precise spectrum of states is a key issue for elucidating the underlying physics, for instance, from a quark model point of view it would greatly constrain the further development of quark model hamiltonians.

Needless to say that the properties of nucleon resonances and in general of the baryon spectrum are closely related to the non-perturbative regime of QCD, being its study and characterization crucial for a deep understanding of, e.g. the mechanism of confinement.

[1] T. Sato and T.S.H. Lee, Phys.Rev.C **54** (1996) 2660.

[2] B. Juliá-Díaz, T.S.H. Lee, T. Sato, L.C. Smith, sub Phys.Rev.C (2006).

[3] B. Juliá-Díaz, B. Saghai, T.S.H. Lee, F. Tabakin, Phys.Rev.C **73**, 055204 (2006).

Le café sera servi 10 minutes avant, en salle 125
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