Contribution ID: **12** Type: **not specified**

Zero temperature properties of mesons and baryons from an extended linear sigma-model

Friday, 20 September 2013 14:30 (30 minutes)

We study scalar, pseudoscalar, vector, and axial-vector mesons as well as octet and decouplet baryons with non-strange and strange quantum numbers in the framework of a linear sigma model with global chiral U_L(3)xU_R(3) symmetry for the mesons and SU_L(3)xSU_R(3) for the baryons. We perform a global fit of meson masses, decay widths, as well as decay amplitudes. The quality of the fit is, for a hadronic model that does not consider isospin-breaking effects, surprisingly good. After the fit in the mesonic sector we also do fit in the baryon sector. We also investigate the question whether the scalar \bar{q}q states lie below or above 1 GeV and find the scalar states above 1 GeV to be preferred as \bar{q}q states. Additionally, we also describe the axial-vector resonances as \bar{q}q states.

Primary author: Dr KOVACS, Peter (Wigner Research Centre for Physics, Hungary)

Co-authors: Dr PARGANLIJA, Denis (Vienna University, Vienna); Prof. RISCHKE, Dirk (Goethe University, Frankfurt); Dr GIACOSA, Francesco (Goethe University, Frankfurt); Prof. WOLF, Gyuri (Wigner Research Centre for Physics, Hungary)

Presenter: Dr KOVACS, Peter (Wigner Research Centre for Physics, Hungary)

Session Classification: Talks and Discussions