

Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Partial decay widths of negative parity baryons in the $1/N_c$ expansion¹ CHANDANA JAYALATH, JOSE GOITY, Hampton University, NORBERTO SCOCCOLA, Comision Nacional de Energia Atomica — The partial decay widths of negative parity excited baryons into pseudo-scalar mesons are studied in the framework of the $1/N_c$ expansion of QCD to order $1/N_c$, and to first order in SU(3) symmetry breaking by the quark masses. In particular, the S and D wave decays of excited baryons in 70-plet of spin-flavor SU(6) are analyzed using the empirical partial decay widths from the Particle Data Group. The importance of two-body effects in the decay amplitudes can be elucidated. Several parameter free relations between partial decay widths are found and tested. The consistency of state-mixing as obtained from the analysis of the decays and from the analysis of the masses is addressed.

¹This work is supported by NSF grant # PHY-0555559.

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Date submitted: 21 Oct 2009

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