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Baryons at Varying Nc: a study with Lattice QCD and Effective Theory[1] JOSE GOITY[2], Hampton University and Jefferson Lab, ALVARO CALLE CORDON[3], Jefferson Lab, THOMAS DEGRAND[4], University of Colorado — Recent Lattice QCD (LQCD) calculations of baryon masses with the number of colors $N_c = 3$, 5 and 7 [1] have opened the opportunity for exploring quantitatively the $1/N_c$ expansion of QCD in the baryon sector. While similar studies have been carried out for glueballs and mesons, which show a remarkably well behaved $1/N_c$ expansion down to the real world's $N_c = 3$, the results in [1] are the first ones of their kind. The calculations were performed in quenched LQCD and with quark masses giving $M_\pi > 400$ MeV. The results are analyzed using an Effective Theory based on the combination of Baryon Chiral Perturbation Theory and the $1/N_c$ expansion [2]. A detailed discussion of the analysis and its implications will be presented, along the lines of a current work in progress [3].

[1] T. DeGrand, Phys. Rev. D 86, 034508
[2] A. Calle Cordon and J. L. Goity, Phys. Rev. D87, 016019
[3] A. Calle Cordon, T. DeGrand and J. L. Goity, work in progress.

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