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Loop Corrections to Baryon Properties in Relativistic Chiral SU(3) Effective Theory MARSTON COPELAND, Clemson University, CHUENG-RYONG JI, North Carolina State University, WALLY MELNITCHOUK, Jefferson Lab — We calculate the pseudoscalar meson loop contributions to the properties of flavor SU(3) octet and decuplet baryons, using a relativistic chiral effective theory framework consistent with Lorentz and gauge invariance. A finite range regularization prescription is applied and compared with dimensional regularization to show better convergence at higher meson masses. Results showing loop contributions to baryon masses, electromagnetic elastic and transition form factors, and flavor asymmetries in parton distribution are presented. The results are also compared with lattice QCD data to compute sigma terms and other relevant quantities.

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