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**Self-energies in a relativistic chiral effective theory** MARSTON COPELAND, Clemson University, CHUENG-RYONG JI, North Carolina State University, WALLY MELNITCHOUK, Jefferson Lab — We calculate the self-energies of the flavor SU(3) octet and decuplet baryons, using a relativistic chiral effective theory framework consistent with Lorentz and gauge invariance. The results are compared using several different regularization prescriptions, including the finite-range regularization, Pauli-Villars, and dimensional regularization, which are shown to yield the same leading nonanalytic behaviors in the chiral limit, as expected in QCD. There is an emphasis on the full relativistic finite-range regularization, and new details of this calculation are explored for self-energies.

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