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Isospin breaking effects in octet and decuplet baryon masses

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We present work designed to compute baryon masses on $N_f = 2 + 1$ CLS ensembles including isospin breaking effects due to non-degenerate light quark masses and electromagnetic interactions. These effects are determined at leading order via a perturbative expansion around the iso-symmetric theory. We furthermore apply a group theoretical operator construction for the various interpolators describing the different members of the baryon octet and decuplet based on a classification by spin, parity, and flavor content. Finally, we will present first numerical results.

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