Contribution ID: **198** Type: **Oral Presentation**

Setting the Scale Using Baryon Masses with Isospin-Breaking Corrections

Thursday, 11 August 2022 10:20 (20 minutes)

We present first results from our effort to incorporate isospin-breaking effects stemming from the non-degeneracy of the light quark masses and electromagnetic interactions into the determination of the lattice scale. To this end we compute the masses of octet and decuplet baryons on isospin-symmetric ensembles generated by the CLS effort for $N_f = 2 + 1$ flavours and include isospin-breaking effects perturbatively. We show leading-order results for baryon masses on two ensembles with $m_\pi \approx 290\,\text{MeV}$ and $m_\pi \approx 215\,\text{MeV}$ at a lattice spacing of $a \approx 0.076\,\text{fm}$.

Primary author: SEGNER, Alexander (Johannes-Gutenberg Universität)

Co-authors: HANLON, Andrew (BNL); RISCH, Andreas (DESY, NIC); WITTIG, Hartmut

Presenter: SEGNER, Alexander (Johannes-Gutenberg Universität)

Session Classification: Hadron Spectroscopy and Interactions

Track Classification: Hadron Spectroscopy and Interactions