



Contribution ID: 34

Type: **Parallel Talk**

Discretization effects on nucleon root-mean-square radii from lattice QCD at the physical point

Tuesday, 1 August 2023 13:50 (20 minutes)

We present results of nucleon structure studies measured in 2+1 flavor QCD with the physical light quarks in a large spatial extent of about 10 fm. Our calculations are carried out with the PACS10 gauge configurations generated by the PACS Collaboration with the stout-smearred $O(a)$ improved Wilson fermions and Iwasaki gauge action at $\beta=1.82$ and 2.00 corresponding to the lattice spacings of 0.085 fm (coarser) and 0.063 fm (finer) respectively. At both lattice spacings, we evaluate nucleon form factors associated with lepton-nucleon elastic scattering measurements. In this talk, we will mainly report our preliminary results of the Root-Mean-Square radii and the discretization effects on them. In addition, the examination of the excited-states contaminations based on PCAC relation will be discussed using our data.

Topical area

Structure of Hadrons and Nuclei

Primary author: TSUJI, Ryutaro (Tohoku University)**Co-authors:** Prof. ISHIKAWA, Ken-Ichi (Hiroshima U.); Dr SHINTANI, Eigo (University of Tsukuba); Prof. AOKI, Yasumichi (RIKEN R-CCS); KURAMASHI, Yoshinobu (University of Tsukuba); Prof. SASAKI, Shoichi (Tohoku U.); YAMAZAKI, Takeshi (University of Tsukuba)**Presenter:** TSUJI, Ryutaro (Tohoku University)**Session Classification:** Structure of Hadrons and Nuclei