Contribution ID: **78** Type: **Poster Presentation**

Strangeness of the gravitational form factors

The gravitational form factors (GFFs) of the nucleon encode information on the structure of the mass, spin, and mechanical properties. In this talk, we present results from a recent investigation on the GFFs of the nucleon in flavor SU(3) symmetry, highlighting the flavor structure of the GFFs within the framework of the SU(3) pion mean-field approach. We show how much momentum fraction of the nucleon is carried by the s-quark and discuss the role of the s-quark contribution to the nucleon mass decomposition by comparing it to the rest energy of the nucleon. Furthermore, we present the flavor decomposition of the intrinsic quark spin and orbital angular momentum, which satisfy Ji's sum rule. The current results indicate that the total angular momentum of the nucleon is dominated by the u-quark contribution, with Ju ~ 0.52, while the d and s-quark contributions are small, with Jd ~ −0.06 and Js ~ 0.04. Additionally, we investigate the hidden contribution to the D-term of the nucleon and find that all of the quark contributions is negative. The magnitude of the d-quark contribution to the D-term is found to be the largest in magnitude, comparable to that of the u-quark contribution.

Primary authors: WON, Ho-Yeon (Inha University); KIM, June-Young (Jefferson Lab)

Co-author: KIM, Hyun-Chul (Inha University)

Presenter: WON, Ho-Yeon (Inha University)

Session Classification: Poster Session