Contribution ID: **92** Type: **oral**

Implications of Li to O data of AMS-02 on our understanding cosmic-ray propagation

Tuesday, 26 October 2021 16:00 (20 minutes)

Space-borne experiments like AMS-02 determine cosmic-ray spectra with unprecedented precision. This allows for more elaborate and better examinations of cosmic-ray propagation in our Galaxy. However, the analysis of this increasingly precise cosmic-ray data requires also a more careful assessment of systematic uncertainties. I will present the results from the analysis of comic-ray measurements of Lithium, Beryllium, Boron, Carbon, Nitrogen and Oxygen by AMS-02. The focus of the analysis lies on systematic uncertainties related to propagation and nuclear cross-sections. The cosmic-ray data is well described by various propagation scenarios which differ for example by including or discarding reaccelartion and/or a break in the diffusion coefficient. In all cases the slope of the diffusion coefficient is robustly constrained in the range between 0.45-0.5 at intermediate rigidities and we find that the use of the AMS-02 Beryllium data provides a lower limit on the vertical size of the Galactic propagation halo at about 3 kpc. However, the consideration of cross section uncertainties is of vital importance. One main conclusion of our work is that cross sections have become a fundamental systematic preventing a deeper understanding of CR propagation.

Please choose the session this abstract belongs to

Cosmic rays

Primary author: KORSMEIER, Michael (O)

Co-author: CUOCO, Alessandro (University of Turin)

Presenter: KORSMEIER, Michael (O)

Session Classification: Session 3