



Contribution ID: 240

Type: poster

He isotopes spectra: a GALPROP-HelMod perspective

Tuesday, 24 September 2024 21:13 (1 minute)

The Alpha Magnetic Spectrometer-02 (AMS-02) has provided high-quality measurements of cosmic-ray (CR) spectra both for nuclei and for isotopes. The interpretation of such high-quality data is challenging because of the temporal variations in solar activity, impacting CR intensity assessments. Using the GALPROP-HelMod joint effort we created a unique analysis framework combining physical interpretation in terms of CR galaxy source and propagation (performed by GALPROP), with a comprehensive description of solar modulation effect on CR intensities (addressed by HelMod-4). In this work, we present our latest results. Alongside the main improvements introduced by the last version of HelMod-4, we investigated the origin and features of He isotopes fluxes and the $^3\text{He}/^4\text{He}$ flux ratio measured by AMS-02. In fact, an observed excess of ^3He at higher energies might suggest the existence of primary ^3He or indicate alterations in propagation parameters across the vast Galactic volume measured by the $^3\text{He}/^4\text{He}$ ratio.

Primary authors: DELLA TORRE, Stefano (Istituto Nazionale di Fisica Nucleare); MASI, Nicolò (Istituto Nazionale di Fisica Nucleare)

Co-authors: BOSCHINI, Matteo Jeroen; GERVASI, Massimo (Istituto Nazionale di Fisica Nucleare); GRANDI, Davide (Istituto Nazionale di Fisica Nucleare); JÓHANNESSEN, Guðlaugur (Science Institute, University of Iceland); LA VACCA, Giuseppe (Istituto Nazionale di Fisica Nucleare); MOSKALENKO, Igor (Stanford University); PEN-SOTTI, Simonetta; PORTER, Troy Anthony (Hansen Experimental Physics Laboratory, Stanford University); QUADRANI, Lucio (Istituto Nazionale di Fisica Nucleare); RANCOITA, Pier Giorgio (MIB); ROZZA, Davide (University of Milano-Bicocca and INFN-MIB); TACCONI, Mauro (Istituto Nazionale di Fisica Nucleare)

Presenter: ROZZA, Davide (University of Milano-Bicocca and INFN-MIB)

Session Classification: Poster Session