Contribution ID : **276** Type : **Poster (A0 portrait)**

On the Spectra of Secondary Cosmic-Ray Nuclei Accelerated at the Supernova Remnants

Tuesday, August 28, 2018 3:45 PM (0:20)

Abstract content

Recently AMS-02 has reported the energy spectra of secondary cosmic-rays Li, Be, B up to a few TeV, which seem to be hardened above ˜200GV. We discuss the production, acceleration, and escape of secondary cosmic-ray nuclei that are produced via spallation of primary cosmic-ray nuclei, such as C, N, and O in a supernova remnant (SNR) shock. Taking into account the energy-dependent escape of cosmic-ray particles from the SNR, which has been inferred from several observations, we calculated simultaneously the spectra of primary and secondary cosmic-ray nuclei escaping the SNR and running away into the interstellar medium. We show that the resulting spectra of secondary cosmic-ray nuclei would be steeper than those of primary cosmic-ray nuclei, which is contrary to the previous studies that try to explain the spectra of secondary cosmic-rays measured by PAMELA/AMS-02 by the reacceleration of secondary cosmic-rays at the SNR shock. Our results may imply that the rising of the positron fraction and the flattening of the antiproton fraction are not due to the reacceleration of secondary cosmic-rays at the SNR shock. The possibility that cosmic-ray Li nuclei are produced by a nearby Type Ia supernova following nova eruptions is also discussed.

Primary author(s) : Dr. KAWANAKA, Norita (Kyoto University)

Presenter(s) : Dr. KAWANAKA, Norita (Kyoto University)

Session Classification : Poster Session and Coffee Break

Track Classification : Cosmic Rays