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New Properties of Secondary Cosmic Rays observed by the Alpha Magnetic Spectrometer on the International Space Station

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Precise knowledge of the rigidity dependence of secondary cosmic ray fluxes and of secondary-to-primary flux ratios is essential in the understanding of cosmic ray propagation. We report the properties of light secondary cosmic-ray lithium, beryllium , boron nuclei, and heavy secondary cosmic ray fluorine nuclei in the rigidity R range 2 GV to 3 TV observed by the Alpha Magnetic Spectrometer experiment on the International Space Station. The secondary-to-primary ratios fluorine-to-silicon and boron-to-oxygen (or boron-to-carbon) will be discussed, showing that the propagation properties of heavy cosmic rays, from fluorine to silicon, are different from those of light cosmic rays, from helium to oxygen. The properties of cosmic-ray sodium and aluminum nuclei, which are partly secondary and partly primary, will also be presented.

Reference to paper (DOI or arXiv)

Your gender (free text)

Primary author(s) : CHEN, Yao (Shandong Institute of Advanced Technology (SDIAT))

Co-author(s) : PANICCIA, Mercedes (DPNC - Université de Genève); Dr. OLIVA, Alberto (INFN Bologna (Italy)); Dr. YAN, Qi (Massachusetts Inst. of Technology (US)); Dr. CHOUTKO, Vitaly (Massachusetts Inst. of Technology (US)); Mr. LIU, Zhen (University of Geneva (CH)); Dr. FORMATO, Valerio (INFN - Roma 2 (IT)); Dr. DEROME, Laurent (LPSC Laboratoire de Physique Subatomique et de Cosmologie (FR)); Dr. ZHANG, Cheng (Chinese Academy of Sciences (CN)))

Presenter(s) : CHEN, Yao (Shandong Institute of Advanced Technology (SDIAT))

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