



Modelization of solar modulation and charge drift effect on galactic cosmic rays for future space missions

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We have recently carried out a new study of electrons and positrons in cosmic rays. This work has allowed us to obtain precious clues on the effect of solar modulation and charge drift on cosmic rays in the Global Solar Magnetic Field. Long-term variations of cosmic-ray fluxes are of major interest to space missions devoted to the study of the cosmic radiation (in particular for antimatter search), and to those for which cosmic rays represent one of the major sources of noise (LISA-PF - LISA). We have developed a parameterization of the incident cosmic-ray flux for various levels of solar modulation during opposite polarity periods. We will have the possibility to verify the reliability of our model in the near future when the PAMELA data, gathered at solar minimum during a negative polarity period with an unprecedented precision, will be circulated. We will also present the important implications of this work for and with a future mission like LISA (2014-2024).