

Effect of the primary cosmic ray flux uncertainties on the secondary positron flux

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In view of the latest publications of the primary CR fluxes, namely proton and helium flux from AMS-02 and CREAM, we aim at re-evaluating the positron flux coming from conventional astrophysical processes, i. e. secondary positrons. Moreover, we plan to estimate how the experimental uncertainties on the primary CR fluxes affect the secondary positron flux, computed by means of a new semi-analytical method for the propagation of cosmic ray positrons, from few hundreds of MeV to 1 TeV. The point of novelty is in the description of the wind convection, the disc energy losses and the diffusive reacceleration, that are often neglected or badly considered in the analytical calculation.

Summary

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