Contribution ID: 85 Type: Regular talk

No sharp spectral features in the local cosmic-ray positron flux

Tuesday 23 November 2021 15:45 (15 minutes)

The local flux of cosmic-ray positrons has been measured to great precision by the AMS-02 experiment. At high energies, the positron flux is dominated by nearby pulsars that convert their spindown energy into electron-positron pairs. Interestingly, simple pulsar models predict sharp spectral features in the positron flux, while AMS-02 observations indicate that the positron spectrum is extremely smooth. Recently, however, observations have shown that the positron production of pulsars might be more complex than previously assumed. In this work, we take into account several mechanisms that greatly reduce the sharp spectral features in the positron flux predicted by the simple models, and create a pulsar model that is consistent with the smooth positron flux.

Author: JOHN, Isabelle (Stockholm University)

Presenter: JOHN, Isabelle (Stockholm University)

Session Classification: Tuesday afternoon session 3