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A study on the boron to carbon ratio inside and outside spiral arms

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Abstract content

The discovery of direct evidence for the acceleration of high energetic particles at the shell supernova remnant RXJ1713.7-3946 underlined the need to calculate the cosmic ray (CR) distribution in the Galaxy on a spatial grid fine enough to resolve the changes in the CR density due to these kind of objects. It was shown before by Buesching et al 2005 that the discrete nature (both in space and time) of supernovae (SN) as sources of Galactic CR leads to their spectra changing in space and time, resulting in a range of possible CR spectra at a given location in the Galaxy. As the most frequent SN types Ib and II are found within spiral arms, one can expect differences in the range of possible spectra in and outside spiral arms. In particular one would expect a significant change of the ratio of secondary to primary cosmic ray isotopes. We present a study on the variation of the local interstellar boron to carbon ratio during the motion of the Sun in and out of spiral arms in its journey around the Galactic center.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

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