

L'origine des rayons cosmiques - On the origin of Galactic cosmic rays

mercredi 2 mars 2022 09:15 (45 minutes)

By using recent measurements of the Galactic cosmic ray composition by the AMS-02, Voyager 1 and Super-TIGER experiments, we have obtained new information on the origin of these energetic particles: they are most likely produced in superbubbles of plasma at millions of degrees that form around massive star clusters. Most of the cosmic-ray particles are accelerated in strong shock waves induced by supernova explosions sweeping across the superbubble plasma. But a small component, which is responsible for the overabundance of ^{22}Ne in the Galactic cosmic ray composition, most probably arises from acceleration of massive star winds in their termination shock.

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