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Measuring the boron-to-carbon flux ratio with the DArk Matter Particle Explorer

The DArk Matter Particle Explorer (DAMPE) has been in operation since December 2015 and has been continuously detecting cosmic rays (CRs) for more than 8 years. With its large acceptance (0.3 $\rm m^2$ sr) and deep calorimeter (32 $\rm X_0$), DAMPE allows to measure proton amd heavy nuclei fluxes up to hundreds of TeV with an improved energy resolution and statistics.

CRs can be classified as primaries and secondaries either if they have been originally injected into space or produced in the interaction of the primary particles with the interstellar medium (ISM) during their propagation. Boron is believed to be mainly produced by the fragmentation of heavier nuclei, such as carbon and oxygen, with the ISM, therefore, the boron-to-carbon flux ratio (B/C) is extensively measured by space instruments to probe the CR propagation.

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