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A new Paradigm on the TeV-scale Cosmic Rays: Contributions from the local sources

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Recent measurements of cosmic ray proton and helium spectra in CREAM, PAMELA and AMS02 experiments show a hardening above a few hundreds of GeV. This excess is hard to understand in the framework of the conventional models of Galatic cosmic ray production and propagation. We propose here to explain this anomaly by the presense of the local sources as a discrete one. Improving the Green function method for the local sources, we consistently derive these nuclei fluxes by taking into account both local and remote sources for which a unique injection rate is assumed. Finally we found cosmic ray propagation parameters for which the proton and helium spectra remarkably agree with the CREAM, PAMELA, AMS02 measurements. By the similar way, we show that the excess of the position can be explained by a few local sources of pulsar.

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