



Laboratoire LEPRINCE-RINGUET
Ecole polytechnique IN2P3/CNRS

Séminaire

Recent results on Galactic cosmic rays origin with TeV gamma-ray astronomy

The cosmic ray origin has been a long standing issue since their discovery at the beginning of the last century. In the last decades the measurement of the cosmic ray composition and energy spectrum with direct and indirect detection reach a precision that led to interesting features. These features, such as for instance energy dependent spectral index, carry on information about the cosmic ray acceleration and their interaction with the interstellar medium. The most robust way to investigate the source spectrum of cosmic rays is through the detection of induced neutral messengers, such as gamma rays, at acceleration sites.

The last generation of gamma ray astronomy experiment has provided an incredible dataset revealing the poorly known sky at these energies. Among the detected sources, a large fraction is associated with supernova remnants (SNRs). They are expected to be the principal contributors to the bulk of galactic cosmic rays. However, the particle spectrum derived from acceleration models and assumed in propagation models is challenged by observation of gamma-ray SNRs. The SNRs paradigm will be discussed at the light of the latest gamma-ray results with a focus at TeV energies.

To address the issues after more than a decade of precise gamma-ray observation a new experiment entered in the building phase. CTA, with its unprecedented sensitivity and energy range, will allow deep investigation of the cosmic ray spectrum injected by the SNRs in the Galaxy. The strategy to detect the extreme Galactic cosmic ray accelerators with CTA will be presented.

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Salle conférence
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Lundi 05 Février
14h00

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Responsables séminaires

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