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Extragalactic and galactic sources: new evidence, new challenges, new opportunities

Wednesday 15 February 2012 15:00 (20 minutes)

First, I will present new evidence, from gamma-ray observations of blazars, that cosmic rays are, indeed, accelerated in AGNs. Second, I will discuss the plausibility of a substantial contribution of transient galactic sources, such as past GRBs and hypernovae, to the observed flux of cosmic-ray nuclei. The likely contamination of UHECR data by the nuclei from past galactic stellar explosions creates new challenges for cosmic-ray astronomy. At the same time, it creates new opportunities for reconstructing galactic magnetic field and for “astro-archaeology”. Finally, I will discuss some observational signatures of astrophysical nuclear accelerators.

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Session Classification: Source models and theory challenges of UHECRs