

**XXX-th International Workshop on High Energy Physics “Particle and
Astroparticle Physics, Gravitation and Cosmology: Predictions, Observations
and New Projects”**



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Panel discussion on Cosmic Rays

Friday 27 June 2014 11:30 (45 minutes)

Moderator: Alexandre Kisselev

Panelists: Fernando Arquerros, Henning Gast, Vladimir Solovov

Questions:

1. What is the origin of the GZK-like suppression of the cosmic ray (CR) flux? Is it due to energy loss during propagation or due to reaching maximum energy achievable in a source?
2. Are the data on mass composition of ultra- high energy CRs consistent with a hypothesis that primary particles are 100% proton? Or an admixture of heavy nuclei is also allowed?
3. Does the deficit of muons in LHC-tuned MC simulations mean that current hadronic interaction models must be seriously corrected?
4. Does the anomalous positron fraction (PF) approach a stable asymptotic value or a sharp cutoff at higher energies is possible?
5. Do we observe annihilation of a dark matter or nearby pulsar contribution? Will anisotropy in an arrival direction of CR leptons rule out a dark matter interpretation of PF?
6. Is low-mass WIMP region completely excluded by the data?

Session Classification: High energy cosmic rays