Seminarium Astrofizyczne
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Quantum gravity signals and the CTA

The arrival of TeV-energy photons from distant galaxies is expected to be affected by their QED interaction with intergalactic radiation fields through electron-positron pair production. In theories where high-energy photons violate Lorentz symmetry (such as some theories of quantum gravity), the kinematics of the process $\gamma+\gamma \rightarrow e+e-$ is altered and the cross-section suppressed. Consequently, one would expect more of the highest-energy photons to arrive if QED is modified by Lorentz violation than if it is not.
I will present a calculation of the sensitivity of the Cherenkov Telescope Array (CTA) to changes in the $\gamma\gamma$-ray horizon of the Universe due to Lorentz violation, and find that it should be competitive with other leading constraints.

Serdecznie zapraszam,
Agnieszka Majczyna