Contribution ID: **1** Type: **not specified**

Gamma Lines and Dark Matter from Anomaly Cancellation (17'+3')

Thursday, October 10, 2024 11:55 AM (20 minutes)

We discuss a simple theory for physics beyond the Standard Model where a Majorana dark matter is predicted from anomaly cancellation. We discuss in detail the minimal theory where the baryon number is a local symmetry spontaneously broken at the low scale. The correlation between the cosmological constraints on the dark matter relic density, the direct detection and collider bounds is investigated. We discuss in great detail the gamma lines from dark matter annihilation showing the possibility to test these predictions in the near future at gamma-ray telescopes such as CTA. We investigate all processes contributing to the total photon flux from dark matter annihilation and point out the unique features that can be used to test this theory for dark matter.

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Session Classification: Dark Matter