Contribution ID: **573** Type: **Poster**

Exploring the Projected Sensitivity of the ANUBIS detector to exotic LLP models

Wednesday 9 July 2025 18:00 (20 minutes)

Despite the success of the Standard Model (SM) there remains behaviour it cannot describe, in particular the presence of non-interacting Dark Matter, which composes a significant fraction of the Universe's matter. Many models that describe dark matter can generically introduce exotic Long-Lived Particles (LLPs). The proposed ANUBIS experiment is designed to search for these LLPs within the ATLAS detector cavern alongside the ATLAS detector, located approximately 20-30 m from the IP. We report on the potential sensitivity of ANUBIS to a selection of LLP models, i.e. Higgs Portal and Heavy Neutral Leptons, as well as future planned studies.

Secondary track

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Session Classification: Poster T02

Track Classification: T02 - Dark Matter