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ANUBIS: future large-scale application of RPC detectors

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An important potential large-scale application of RPC detectors in the near future is the ANUBIS detector at the HL-LHC, with a total gas gap area of about 8,000 m². The primary physics goal for the ANUBIS detector is searching for new long-lived particles (LLP) that are predicted in many extensions of the Standard Model with Dark Matter candidates. The ANUBIS detector will provide unprecedented sensitivity to LLPs with decay lengths of O(10m) and above produced at the electroweak scale. After a brief review of the ANUBIS physics case, the performance benchmarks that are dictated by the physics case will be discussed, and a proposed design of the ANUBIS detector will be outlined. This year, a first complete prototype detector module called proANUBIS has been taking data in the ATLAS cavern. The physics case for proANUBIS and its relevance to ANUBIS physics case will be outlined.

Author: BRANDT, Oleg (University of Cambridge (GB))Presenter: BRANDT, Oleg (University of Cambridge (GB))Session Classification: HEP & BHEP applications (part II)