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ATLAS Tile Calorimeter Phase-II upgrade low-voltage power supply production and testing

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The Large Hadron Collider (LHC) has planned a series of upgrades leading to a High Luminosity LHC (HL-LHC), which would produce five times the nominal instantaneous luminosity of the LHC. The ATLAS Phase II upgrade in 2029, will accommodate the detector and data acquisition
system for the HL-LHC. The Tile Calorimeter on- and off-detector electronics will be completely replaced. This is expected to improve the precision of the calorimeter signals used by the trigger system. The ATLAS Low Voltage Power Supply (LVPS) Project is a research and development project that aims to design and manufacture a set of replacement low voltage power supply transformer-coupled buck converter (bricks) to replace an existing design used for the LHC Run-2 period. The latest TileCal bricks are DC-DC converters that take 200V input from the DC power sources and output 10V to the front-end circuits with individual brick control, and radiation hardness. A total of 256 Low Voltage boxes will be put on the detector, with 8 low voltage bricks mounted in each box. Results of the electrical tests of the latest brick prototype will be presented.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

Primary author: NKADIMENG, Edward (University of the Witwatersrand)

Co-authors: MCKENZIE, Ryan (University Of the Witwatersrand); Prof. MELLADO, Bruce (University of the Witwatersrand, iThemba Labs)

Presenter: NKADIMENG, Edward (University of the Witwatersrand)

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