

Transverse momentum dependent forward neutron spin asymmetries in p+p collisions at $\sqrt{s} = 200$ GeV

ASP ONLINE SEMINAR - NOVEMBER 9, 2021

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Dr. Mulilo did his Ph.D. in nuclear and high energy physics at Korea University in Seoul, South Korea and his dissertation research work in collaboration with RIKEN Research Institute in Japan where he worked on the unfolding analysis of transverse single spin asymmetries (TSSA) for very forward neutron production in transversely polarized proton-proton (p + p) collisions at a center of mass energy equal to 200 GeV. The data was taken in 2015 by the PHENIX collaboration at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (BNL), New York, United States. In the last quarter of 2019, he joined Brookhaven National Laboratory as an intern working on GEANT 3 and PISA simulations of the Zero Degree Calorimeter (ZDC) and Shower Max Detector (SMD) subsystems of the PHENIX detector. His research work is published in the American Physical Review Journal D (PRD). After completion of his PhD this year, Dr. Mulilo has continued his research work with scientists at RIKEN research institute in Japan for the PHENIX Collaboration at RHIC studying neutron single spin asymmetries in transversely polarized proton-heavy nuclei collisions and detector correlations.

He also owns a Master of Science degree in experimental nuclear physics at Korea University during which, he worked diligently on the development of the neutron detector array (NDA) for the large acceptance multipurpose spectrometer (LAMPS), which is currently being utilized for the study of the nuclear symmetry energy at the RAON rare isotope beam accelerator facility complex in South Korea. The accelerator facility is the first of its kind to have been built in South Korea for basic science research. He is currently working as a full time lecturer and researcher in the School of Natural Sciences, Department of Physics at the University of Zambia, Great East Road Campus, Lusaka, Zambia. Prior to the commencement of his master's degree with Korea University and upon completion of his Bachelor's degree in Physics with the University of Zambia, he was among the first student participants of the African School of Physics (ASP), which was held in Stellenbosch, South Africa in 2010 tagged ASP2010. He is also currently one of the four conveners of the Young Physicist Forum (YFP) in ASFAP strategy. In this seminar, Dr. Mulilo gives a talk on transverse momentum dependent forward neutron single spin asymmetries (A_N) in transversely polarized p + p collisions at the center of mass energy equal to 200 GeV, which was his doctoral research dissertation study contribution towards an overall understanding of particle production mechanisms in high energy physics.