Contribution ID: **334** Type: **Oral Presentation**

2022/2023 NMU-NITheCS Internship Programme: Connecting Quarks with the Cosmos, connecting people with the Universe

Tuesday, 4 July 2023 10:00 (40 minutes)

NMU-NITheCS Internship Programme is an annual summer study program in theoretical and computational sciences.
The internship research topics are under the overarching the subject: *Matter Under Extreme Conditions in Heavy Ion Collisions and Astrophysics* which is an inter-/trans-disciplinary subject as it is born at the borders between particle and nuclear physics, astrophysics, gravitation, and cosmology. This allows the collaboration of final year BSc, BSc (Honours), and MSc students from different disciplines such as mathematics, physics, statistics, and computing sciences to learn and to find solutions to cross-disciplinary scientific questions. The objectives of multiple disciplinary approaches are to resolve real world or complex problems, to provide different perspectives on problems, to create comprehensive research questions and to provide comprehensive solutions to the problems.

During the 2022/2023 NMU-NITheCS internship the interns had interactive sessions at Nelson Mandela University, Gqeberha from the 28th of November 2022 to the 23rd of December 2022. During the first two weeks of the internship the interns had an opportunity to attend the 7th Biennial African School of Physics (ASP2022) which was hosted at Nelson Mandela University in parallel with the internship. This was followed by 2 weeks of working on the assigned research topics to groups consisting of four interns per topic. The internship program then resumed online from mid-January 2023 to end of April 2023.

In this talk we will present the structure and processes of the internship programme as well as the overview of the results from each topical group and show the connections between topical groups as per the theme of the internship programme (title of the talk).

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

No

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

N/A

Primary authors: Prof. MURONGA, Azwinndini (Nelson Mandela University); Mr BAATJES, R. R. (Department of Physics, University of the Western Cape, Bellville, South Africa); BHENGU, B. (Department of Physics, University of Zululand, KwaDlangezwa, South Africa); CEBEKHULU, N. G. (Department of Physics, University of Zululand, KwaDlangezwa, South Africa); CELE, K. (School of Chemistry and Physics, University of KwaZulu--Natal, Durban, South Africa); DZHIVHUHO, A. P. (Department of Physics, University of Venda, Venda, South Africa); GABELA, N. T. (Department of Physics, University of Zululand, KwaDlangezwa, South Africa); GUGA, A. A. (Department of Physics, University of Cape Town, Cape Town, South Africa); KAMGA, B. V. (Department

of Physics, Stellenbosch University, Stellenbosch, South Africa); KHUMALO, T. C. (School of Physics, University of the Witwatersrand, Johannesburg, South Africa); MACHEMA, C. M. (Department of Physics, North-West University, Potchefstroom, South Africa); MAKUMBANE , V. (Department of Physics, University of the Free-State, Bloemfontein, South Africa); Prof. MATHEBULA, D. (Department of Decision Sciences, University of South Africa, Pretoria, South Africa); MDLATU, Y. (Department of Physics, Nelson Mandela University, Gqeberha, South Africa); MMATLADI , P. (Department of Physics, University of Cape Town, Cape Town, South Africa); MNISI, S. (Department of Statistics and Operations Research, University of Limpopo, Limpopo, South Africa); MOENG, A. M. M. (Department of Physics, University of Johannesburg, Johannesburg, South Africa); MOILA , M. M. (Department of Computer Sciences, University of Limpopo, Limpopo, South Africa); MONGALE, L. O. (Department of Physics, North-West University, Potchefstroom, South Africa); MOTHIBI, M. A. (Department of Physics, Rhodes University, Grahamstown, South Africa); MOTJOPE, D. P. (Department of Physics, University of Zululand, KwaDlangezwa, South Africa); MTHEMBU, S. H. (Department of Physics, University of the Western Cape, Bellville, South Africa); MTUTI, A. (Department of Physics, Nelson Mandela University, Gqeberha, South Africa); MURONGA, S. (Department of Physics, University of Venda, Venda, South Africa}); NEMAKHAVHANI , T. E. (Department of Physics, University of Johannesburg, Johannesburg, South Africa); NETSHAMUTSHEDZI, P. (Department of Mathematical and Computational Sciences, University of Venda, Venda, South Africa); NETSHIAVHA , N. T. (Department of Physics, University of Cape Town, Cape Town, South Africa); NETSHIHENI , S. E. (Department of Physics, University of Venda, Venda, South Africa); NETSHIKWETA, R. (Department of Mathematical and Computational Sciences, University of Venda, Venda, South Afric); NYAWENI , F. S. (Department of Physics, Nelson Mandela University, Gqeberha, South Africa); OGUNDIPE, S. (Department of Physics, University of Zululand, KwaDlangezwa, South Africa); PARADZA, M. W. (National Institute for Theoretical and Computational Sciences, Stellenbosch,South Africa); PHOPHI, V. (Department of Physics, University of Venda, Venda, South Africa); QUSHU, A. (Department of Physics, University of the Western Cape, Bellville, South Africa); RAMAOKA, M. M. (African Institute for Mathematical Sciences, Muizenberg, South Africa); RAPHULU, F. (Department of Mathematical and Computational Sciences, University of Venda, Venda, South Africa); SEABI, M. M. (Department of Physics, Nelson Mandela University, Gqeberha, South Africa); SIBIYA, M. (Department of Physics, University of the Western Cape, Bellville, South Africa); SOMATHUBE, S. (Department of Chemical and Physical Sciences, Walter Sisulu University, Mthatha 5100, South Africa); THEKHWE, M. (African Institute for Mathematical Sciences, Muizenberg, South Africa); WORKU, D. (Department of Mathematics and Physics, Cape Peninsula University of Technology, Bellville, South Africa); XIPU, S. (Department of Physics, University of Johannesburg, Johannesburg, South Africa)

Presenter: Prof. MURONGA, Azwinndini (Nelson Mandela University)

Session Classification: Theoretical and Computational Physics

Track Classification: Track G - Theoretical and Computational Physics