

HDM 2013

International Workshop on Hot and Dense Nuclear and Astrophysical Matter

25 - 29 November 2013

University of Venda,
Thohoyandou,
Limpopo, South Africa

3rd Year and Honours Physics students are
welcome. Financial support is available.

Hot and dense nuclear matter plays an important role in the quark-hadron transition shortly after the big bang, in the element production in stars and the interior of neutron stars. The properties of such matter under extreme conditions can be studied in relativistic heavy-ion collisions. Several countries operate facilities or have plans to build new accelerator systems, such as FAIR at Darmstadt and NICA at Dubna, to investigate hot and dense nuclear matter in heavy-ion collisions. Current experiments are conducted at GSI in Darmstadt, the RHIC (Relativistic Heavy Ion Collider) in Brookhaven and at the LHC (Large Hadron Collider) at CERN in Geneva. The primary aims of the experiments at the high-energy frontier are: (i) to study a new state of matter, the 'quark-gluon-plasma' (QGP) and to infer its equation of state and transport properties; (ii) and to study the physics of the Standard Model and beyond.

The topics of the school and workshop have been chosen in the young and fast expanding fields at the interphase between nuclear, particle, astrophysics and cosmology. The idea is to bring together internationally highly recognized experts in the field with young scientists and students.

SCHOOL TOPICS:

- ~ Quantum Field Theory
- ~ Statistical and Thermal Physics of Hot and Dense Nuclear Matter
- ~ Particle Physics and High Energy Physics
- ~ Nuclear and Particle Astrophysics
- ~ Relativistic Fluid Dynamics and Transport Theory

WORKSHOP TOPICS:

- ~ Equation of state and transport properties of hot and dense nuclear matter
- ~ Space time evolution of hot and dense nuclear matter
- ~ LHC Physics and SA-CERN Program
- ~ Heavy-ion collisions at high baryon densities and GSI-FAIR
- ~ High energy Astrophysics
- ~ Physics and Astrophysics of compact stars

<http://physics.uj.ac.za/conferences/2013/HDM2013/>

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LOCAL ORGANIZING COMMITTEE:

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