FRIDAY 8 JULY 2016

08:40 - 09:40 — PLENARY (LT1): STRONGLY INTERACTING MATTER AT HIGH ENERGY DENSITY (p 17)
Dr. Larry MCLERRAN (Brookhaven National Laboratory, New York)

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TRACK	Division for Physics of Condensed Matter and Materials (1) - LT1	Division for Physics of Condensed Matter and Materials (2) - 4B	Nuclear, Particle and Radiation Physics (1) LT3	Theoretical and Computational Physics (1) 2A	Photonics 5C
Theme / Chair	General Orals DR. CHIRWA, MAX	General Orals DR. OMOTOSO, EZEKIEL	- DR. LEADBEATER, THOMAS	- DR. HOROWITZ, WILLIAM	- PROF. ROHWER, ERICH
09:40 - 10:00	Exceptionally Crystalline TiO_2 Mesocrystals with Enhanced Light Harvesting Characteristics for solar energy conversion **Dr. HEGAZY, Aiat** (Nat. Research Centre) - 34	Effect of Annealing Temperature on Optical and Electrical Properties of ZnO Thin Films Synthesized by Sol-Gel Method **Mr. TRILOK KUMAR PATHAK** (Gurukula Kangri Univ) - 37	BAGEL: the HPGe clovers array at K600 spectrometer **Dr. PELLEGRI, Luna** (Wits and iThemba) - 29	NON-SPECIALIST LECTURE: Nonequilibrium processes and their fluctuations **Prof. TOUCHETTE, Hugo** (NITheP) - 159	Modelling of a 2 micron cladding-pumped cw Tm-doped silica fibre laser **Dr. WU, Lorinda** (CSIR-NLC) - 451
10:00 - 10:20	Structural and luminescence properties of sol-gel derived $BaMg_2Al_6Si_9O_{30}$: Eu^{2+} nanophosphors **Dr. KUMAR, Ashwini** (UFS) - 39	Thermal effects on the plasmonic properties of Ag embedded glass based metamaterials **Dr. KUMAR, Promod** (UFS) - 42	Fine structure of the Isovector Giant Dipole Resonance of neutron-rich calcium isotopes using the (p,p') reaction at zero-degrees **Dr. USMAN, Iyabo** (Wits) - 369		Development of high-power and high-energy solid-state lasers and amplifiers **Dr. STRAUSS, Hencharl** (CSIR NLC) - 387
10:20 - 10:40	RBS-Channelling analysis into the effect of thermal annealing on GeSn strained layers **Prof. COMRIE, Craig** (UCT & iThemba LABS) - 74	Theory for diffusivity measurements when the temperature is ramped linearly **Prof. THERON, Chris** (University of Pretoria) - 119	Observation of K-splitting in the Isoscalar Giant Quadrupole Resonance within the neodymium isotope chain using high energy-resolution inelastic proton scattering **Prof. CARTER, John** (Wits) - 388	Dynamics and thermodynamics of open quantum Brownian motion **Dr. SINAYSKIY, Ilya** (NITheP and UKZN) - 339	14 W Mid-Infrared Optical Parametric Oscillator based on Zinc Germanium Phosphate **Dr. KOEN, Wayne** (CSIR NLC) - 285

TRACK	Physics Education 2B	Astrophysics (1) 5A	Space Science 5B	Applied Physics (1) LT2
Theme / Chair	- DR. TAYLOR, DALE	HE Astrophysics and Quasars DR. BUCKLEY, DAVID		- DR. KHANYILE, NCAMISO
09:40 - 10:00	Analysis of Electric Circuits using MATLAB and Simulink **Mr. ERO, Felix** (Lead City University) - 445	A comparative timing and spectral analysis of Suzaku X-ray data of the nova-like variable system AE Aquarii **Dr. VAN HEERDEN, Hendrik Jacobus** (UFS) - 141		Activated carbon derived from tree bark biomass for high performance electrochemical capacitors **Dr. MOMODU, Damilola** (UP) - 298
10:00 - 10:20	Tests that promote physics learning **Dr. HERBERT, Mark** (University of the Western Cape) - 430	The contribution of photons from the circumstellar disc to gamma-gamma absorption in PSR B1259-63 **Dr. VAN SOELEN, Brian** (UFS) - 392		Measurements of Atmospheric Carbon Dioxide in South Africa **Mr. MUDAU, Azwitamisi** (Nat. Resources and the Environment) - 402
10:20 - 10:40		Low mass supermassive blackholes of quasars and the low frequency radio luminosity correlation **Mr. MGUDA, Zolile** (UCT) - 453		Dose perturbation effects of unilateral Ti prosthesis in the dosimetry of 6 MV photon beam **Dr. ADE, Nicholas** (UFS) - 20

10:40 - 11:10 — Tea & Coffee Break

TRACK	Division for Physics of Condensed Matter and Materials (1) - LT1	Division for Physics of Condensed Matter and Materials (2) - 4B	Nuclear, Particle and Radiation Physics (1) LT3	Theoretical and Computational Physics (1) 2A	Photonics 5C
Theme / Chair	General Orals PROF. NAIDOO, SR	General Orals DR. PROMOD THAKUR	- DR. BUCHER, TD	- DR. MALUTA, NE	- PROF. ROHWER, ERICH
11:10 - 11:30	Spectroscopic investigation of Tm^{3+} containing Lithium borate glasses **Dr. RAMTEKE, Durgaprasad** (UFS) - 72	Dynamics of several ultra-cold particles in a double-well potential **Dr. SOWINSKI, Tomasz** (Institute of Physics of the Polish Academy of Sciences) - 112	Search for chirality in 192Tl **Dr. NDAYISHIMYE, Joram** (iThemba LABS) - 344	Computational study of TiO_2 Brookite (1 0 0) surface doped with Ruthenium for application in dye sensitised solar cells **Dr. MALUTA, Nnditshedzeni Eric** (Univ. of Venda) - 321	Holographic toolkit for optical communication beyond orbital angular momentum **Dr. ROSALES-GUZMAN, Carmelo** (Wits) - 178
11:30 - 11:50	Ferromagnetism in magnetic 4f-systems **Dr. NOLTING, Volkmar** (VUT) - 132	Internal quantum efficiency and energy transfer processes in Ce^{3+} co-doped ZrO_2: Eu^{3+} nanorod **Dr. AHEMEN, Iorkyaa** (UFS) - 187	Identification of chiral pairs in multiple chiral bands associated with the same nucleon configuration **Dr. SHIRINDA, OBED** (iThemba LABS, US) - 356	Modeling of the Debye Temperature, Melting Entropy and Enthalpy of Nanomaterials **Dr. SINGH, Madan** (Nat. Univ. of Lesotho) - 1	Orthonormal polynomials for centred non-uniform rotationally symmetric pupils **Dr. MAFUSIRE, Cosmas** (UP) - 327
11:50 - 12:10	Effect of calcination on structural and magnetic properties of nickel chromite **Dr. MOHANTY, Pankaj** (UJ) - 206	Effect of thermal annealing on the electrical characteristics of Au/Ni Schottky contacts on high doped n-type 4H-SiC **Dr. OMOTOSO, Ezekiel** (University of Pretoria) - 235	The design and simulation of a new experimental set up for measuring short nuclear level lifetimes **Mr. SINGH, Bhivek** (UWC) - 370	Reduction of noise in CSDG MOSFET with HfO_2 **Prof. SRIVASTAVA, VIRANJAY M.** (UKZN) - 277	

TRACK	Physics Education 2B	Astrophysics (1) 5A	Space Science 5B	Applied Physics (1) LT2
Theme / Chair	- DR. ALBERS, CLAUDIA	Pulsars, Galaxies DR. JOSEPH, TANA	- DR. HABARULEMA, JOHN BOSCO	- PROF. VAN DYK, ERNEST
11:10 - 11:30	Teaching problem-solving by means of shoestring experiments **Prof. NAIDOO, Deena** (Wits) - 138	Spatially-Dependent Modelling of Pulsar Wind Nebulae **Mr. VAN RENSBURG, Carlo** (North-West University) - 255	SILVER MEDALLIST LECTURE: 3D Models of Stellar Wind Presented on Thursday **Dr. MOHAMED, Shazrene** (SAAO)	NON-SPECIALIST LECTURE: Photonics Prototyping Facility **Dr. NAIDOO, Darryl** (CSIR) - 527
11:30 - 11:50	Operating the New Naval Hill Planetarium - An innovative and entrepreneurial approach **Prof. HOFFMAN, Matthiam** - 487	Discovery of the First White Dwarf Pulsar **Dr. BUCKLEY, David** (SAAO) - 250		
11:50 - 12:10	The metacurriculum of first year physics service courses **Dr. TAYLOR, Dale** (UCT) - 521	Investigating the hot gas in active Brightest Cluster Galaxies **Mrs. RATSIMBAZAFY, ANDO** (North-West University) - 36	~~Solar Total Irradiance Behaviour during Cycles 23-24 **Dr. KOTZE, Pieter** (SANSA) -~~	Effect of atmospheric turbulence on entangled photon field generated by partially coherent pump beam **Dr. JOSHI, Stuti** (UKZN) - 272

12:10 - 13:10 — PLENARY (LT1): STUDIES OF THE SHAPES OF HEAVY PEAR-SHAPED NUCLEI AT ISOLDE (p 17)
Prof. Peter BUTLER (University of Liverpool)

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13:10 - 14:00 — Lunch Break

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Theme / Chair	General Orals DR. NOLTING, VOLKMAR	General PROF. SWART, HENDRIK	- PROF. MURONGA, A	- PROF. NEDEBOCK, K	Galaxies and GRBs DR. FRANK BRADLEY
14:00 - 14:20	Simonkolleite nano-platelets: Synthesis and temperature effect on hydrogen gas sensing properties **Dr. SITHOLE, Joseph** (UNISA) - 279		First Run 2 Soft QCD Results from ATLAS **KAR, Deepak** (Wits) - 163	The hierarchal decision making algorithm as an analytical tool for a natural understanding physical systems **Mr. AGWA-EJON, JOHN FRANCIS** (UJ) - 416	Galaxy stacking strategies for MeerKAT **Dr. ELSON, Ed** (UCT and SAAO) - 315
14:20 - 14:40	Ion beam modification of diamond to DLC: A SBS, Raman and HRTEM study **Prof. NAIDOO, Shunmugam Ramsamy** (Wits) - 379		AdS:CFT predictions for momentum correlations of bbbar pairs in heavy ion collisions **Mr. HAMBROCK, Robert** (UCT) - 515	The energy density as a function of spacetime for a light quark jet in AdS/CFT **Dr. MORAD, Razieh** (UCT) - 306	Identifying new narrow-line Seyfert 1 galaxies and white dwarfs from the second ROSAT all-sky survey catalogue **Dr. ODENDAAL, Alida** (UFS) - 180
14:40 - 15:00	Electrical characterisation of defects induced in GaN by electron beam exposure **Mr. NGOEPE, Phuti** (UP) - 452	~~Computational modelling of sulphides mineral (FeS_2) **Dr. LETSOALO, Thabo** (University of Limpopo) - 37[illegible]~~	The search for the Dark Vector Boson via the Higgs Portal **Prof. CONNELL, Simon** (UJ) - 104	Radial Flow in Non-Extensive Thermodynamics and Study of Particle Spectra at LHC in the Limit of Small $q-1$ **Dr. BHATTACHARYYA, Trambak** (UCT) - 66	Observing Gamma-Ray Bursts with the H.E.S.S. experiment **Dr. GARRIGOUX, Tania** (NWU) - 385
15:00 - 15:20	Sustained pairing frees dipolar traits and the circular current's own magnetic dipolar nature **Dr. CHIRWA, Max** (WSU) - 455		Implementation of the pre-amplifier response function for the iThemba LABS segmented clover detector **Dr. BUCHER, Thifhelimbilu D** (iThemba LABS) - 372	Phenomenology of additional scalar bosons at the LHC **Dr. KUMAR, Mukesh** (Wits) - 449	
15:20 - 15:40	Search for dilute magnetism in 3*d* doped III-Nitrides - Results from Mössbauer Spectroscopy **Dr. MASENDA, Hilary** (Wits) - 476		Tracking Electrons Produced by Compton Scatter within a Prompt Gamma Imaging Device **Dr. PETERSON, Stephen** (UCT) - 157	Next to leading order electron-quark interaction **Dr. KEMP, Garreth** (UJ) - 302	

TRACK	Physics Education 2B	Astrophysics (1) 5A	Applied Physics (1) LT2
Theme / Chair	- MR. SOUTHEY, PHILIP		- DR. GIBBON, TIMOTHY
14:00 - 14:20	Faculty-Student Interaction - The Informal Revolution **Mr. SCHWARTZ, Marthnis Johannes** (UniZulu) - 224	See page 30	Heterogeneous powders ID by means of fracture mechanics **Dr. VIGLIATURO, Ruggero** (UKZN) - 319
14:20 - 14:40	A new approach to teaching graphs to first year science students **Mr. TSIPA, AJ** (UniZulu) - 380		Efficiency measurement system for thermoelectric devices **Dr. MARIOLA, Marco** (UKZN) - 266
14:40 - 15:00	Fluid Dynamics as a precursor to a "Griffiths level" Electrodynamics course **Dr. TUPPER, Gary** (UCT) - 482		Spark Plasma Sintering of 2507 duplex stainless steel **Dr. SULE, Richard** (Wits) - 422
15:00 - 15:20	I taught them everything, but they still couldn't get it right **Mr. MOLEFE, Paul** (UJ) - 273		Physical stability of ionic liquid polymers for the recovery of Se and Te from metallurgical aqueous solutions **Ms. MOGOMETSI, Mpho** (UJ) - 448
15:20 - 15:40	Multiple Choice Question Responses: Right or Wrong? **Dr. MASENDA, Hilary** (Wits) - 477		Preparation and characterization of nanoporous carbon from expanded graphite for high energy density supercapacitor in aqueous electrolyte **Dr. BARZEGAR, Farshad** (UP) - 12

	Physics Education 2B
15:40 - 16:00	Termites in our tests? The role of stigmergy in our examination system **Mr. CLERK, Douglas** (Wits) - 135
16:00 - 16:20	Using Wolfram Mathematica to Analyze and Visualize experimental data **Mr. DEMPERS, Clemens** (Blue Stallion Technologies) - 582

Tea & Coffee Break