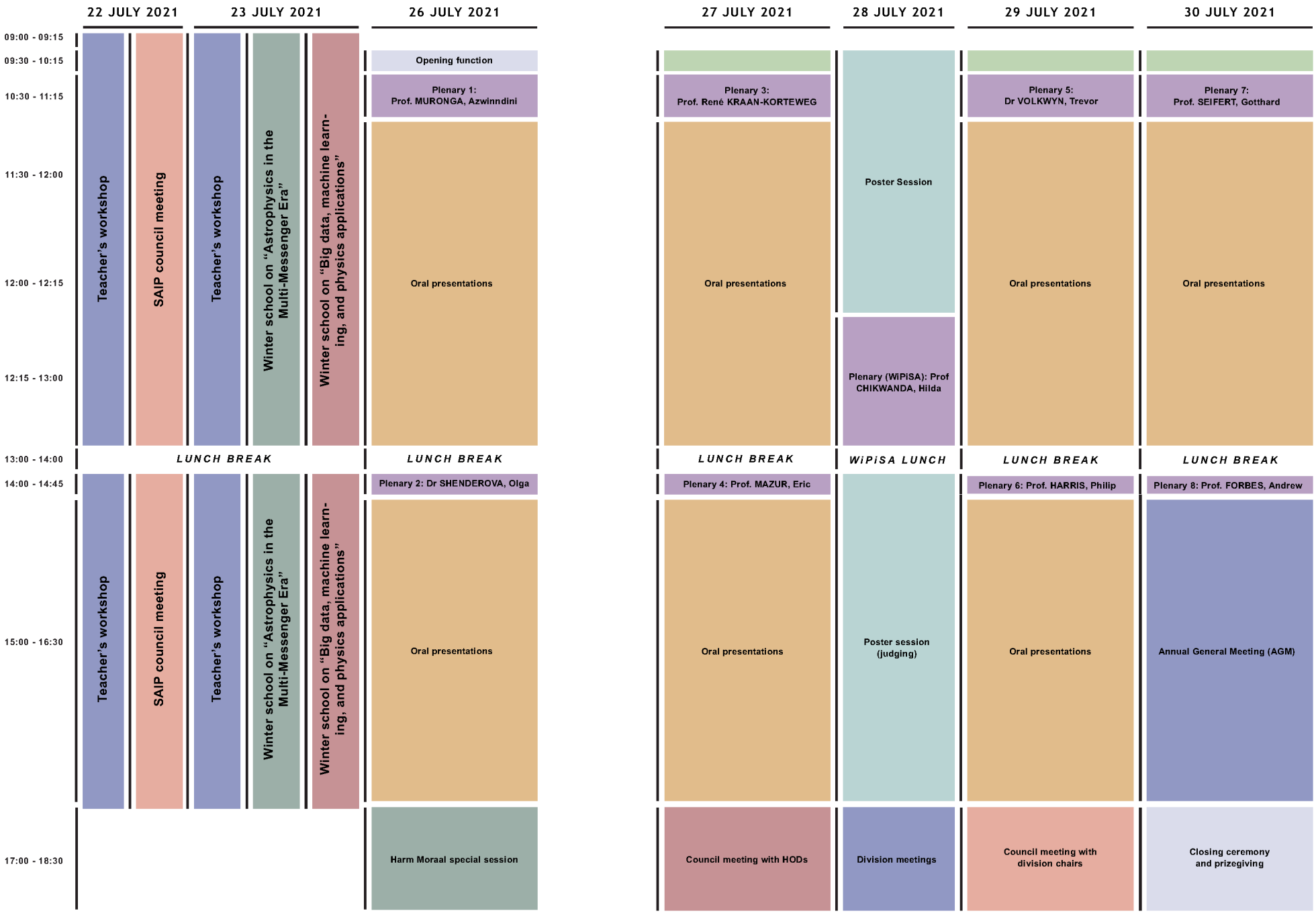
GENERAL TIMETABLE



NUCLEAR, PARTICLE & RADIATION PHYSICS

	26 JULY 2021	27 JULY 2021	28 JULY 2021	29 JULY 2021	30 JULY 2021
09:30 - 10:15	Opening function		61 The replacement and refurbishment of Gap Scintillator Counters for the ATLAS Tile Calorimeter Phase-I Upgrade. ***Gaogalalwe Mokgatitswane*** *(Wits)*		
10:15 - 10:30	Plenary 1	Plenary 3	268 Comparison of Indoor Radon Levels measured with three different Detectors (Passive and Active). **Cynthia Sethabela** *(CNSS)*	Plenary 5	Plenary 7
10:30 - 10:45			129 Measurements of neutron energy spectra up to 200 MeV at the iThemba LABS fast neutron beam facility. ***Kutullo Maibane*** *(UCT)*		
10:45 - 11:00			113 A compact neutron spectrometer for neutrons produced by cosmic rays. ***Erin Jarvie*** *(UCT)*		
11:00 - 11:15			35 Statistical properties of 133Xe from inverse kinematics Reactionsextracted using the Ratio Method. ***Teffo Seakamela*** *(UJ)*		
11:30 - 11:45	350 Activity Concentration Measurement of Naturally-Occurring Radionuclides in Various Vegetation plots in Rustenburg, North-West Province, South Africa. ***OLAGBAJU, Peter*** *(North West University, South Africa)*	45 *Background decomposition in $Z\gamma$ events used in the search for high-mass resonances.* ***Phuti Ntsoko Rapheeha***	Poster Session	364 Fine structure of the ISGMR in 90Zr, 120Sn and 208Pb. ***BAHINI, Armand*** *(School of Physics, Wits)*	170 Statistical correlations impacting a top quark mass measurement in 13 TeV proton-proton collision data from the ATLAS detector. ***Kevin Nicholas Barends***
11:45 - 12:00	351 Assessment of NORM in fruits and vegetables from local markets in Hartbeespoort, Mahikeng and Pretoria. ***GOUWS, Veronica*** *(Tomsk Polytechnic University)*	97 A search for a high-momentum high-mass neutrino in pp collisions with the ATLAS detector ***Mvelo Dhlamin***		365 Transfer reactions to populate the PDR in 96Mo. ***Ms KHUMALO, Thuthukile*** *(Wits/iThemba LABS)*	73 Quark versus Gluon Jet Tagging. ***Tasnuva CHOWDHURY***
12:00 - 12:15	28 The derivation of preliminary reference levels for radioactivity in drinking water surrounding authorised sites. ***Thato Molokwe***	54 Search for heavy resonances in the $\ell^+\ell^-\ell^+\ell^-$ final state in association with missing transverse energy using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. ***Humphry Tlou***		366 Validation of the Monte Carlo model for 6 and 15 MV photon beams of VARIAN CLINAC IX Linac. ***DUMELA, KHOMBO*** *(STUDENT)*	212 Anomaly detection with Data Quality Early Warning Systems in ATLAS using machine learning. ***Senzo Msutwana***
12:15 - 12:30	240 Upgrade of the iThemba LABS Fast Neutron Beam Facility towards ISO/IEC 17025 Accreditation. ***Zina Ndabeni***	60 Photons in Darkness. ***Ms Karien du Plessis***	Plenary (WiPiSA): ***Prof CHIKWANDA, Hilda***	367 Application of tagged neutron method for detecting diamonds in kimberlite. ***SEBELE, Motswakae*** *(Botswana International University of Science and Technology)*	44 The use of Semi-Supervision in the search for heavy resonances with the Zγ final state. ***Mr Nalamotse Joshua Choma***
12:30 - 12:45	355 Investigation of limit of detection using standard radioactive sources with a LaBr3(Ce) detector. ***VAN NIEKERK***	70 Search for dark-sector showering in ATLAS using semi-visible jets ***Sukanya Sinh***		279 Connecting multi-lepton anomalies at the LHC and Astrophysical observations. ***Elias Malwa***	119 Machine learning approach for the search of resonances with topological features at the Large Hadron Collider. ***Salah-eddine Dahbi***
12:45 - 13:00	356 Multi-photon decay mode spectroscopy of positronium. ***JOHNSON, Storm*** *(University of Cape Town)*	68 Single Leptoquark Search in ATLAS ***Lawrence Davou Christopher***		71 The anatomy of the multi-lepton anomalies at the LHC and the potential connection with other anomalies. **Bruce Mellado**	33 An Investigation of overtraining within Semi-Supervised Machine Learning Models in the search for heavy resonances at the LHC. ***Benjamin Lieberman***
13:00 - 14:00	***LUNCH BREAK***	***LUNCH BREAK***	***WiPiSA LUNCH***	***LUNCH BREAK***	***LUNCH BREAK***

NUCLEAR, PARTICLE & RADIATION PHYSICS

	26 JULY 2021	27 JULY 2021	28 JULY 2021	29 JULY 2021	30 JULY 2021
13:00 - 14:00	***LUNCH BREAK***	***LUNCH BREAK***	***WiPiSA LUNCH***	***LUNCH BREAK***	***LUNCH BREAK***
14:00 - 14:45	Plenary 2	Plenary 4	Poster session *(judging)*	379 Quick and Quirk with Quarks: Using new ideas in AI to search for Dark Matter. ***Prof. HARRIS, Philip***	Plenary 8
15:00 - 15:15	66 Electronics Research Laboratory at University of Zululand: Contributing towards the ATLAS Experiment at CERN. ***Betty Kibirige***	358 Measurement of the photoabsorption cross section of 24Mg. ***BEKKER, Jacob***		158 A search for tWZ production in the trilepton channel using Run 2 data from the ATLAS experiment. ***Benjamin Warren***	Annual General Meeting (AGM)
15:15 - 15:30	283 Reliability testing of the End-of-Substructure card for operation within the ATLAS Inner Tracker. ***Mr Max van der Merwe***	359 Study of the 44Ti(alpha,p)47V reaction rate using high-precision 50Cr(p,t)48Cr measurements. ***BINDA, Sifundo*** *(University of the Witwatersrand)*		208 Search for a heavier Higgs like boson and a dark force boson using ATLAS experiment results. ***Mr Xola Mapekula***	
15:30 - 15:45	37 South African contribution towards the ATLAS Tile Calorimeter PreProcessor. ***Mpho Gift Doctor Gololo***	357 Optic Fibre Sensors for Temperature Sensing in Pressurized Water Reactors. ***Bongani Maqabuka***		203 Search for the non-resonant Higgs-pair production in $\ell^+\ell^-\ell^+\ell^-$ final state at $\sqrt{s} = 13$ TeV in the ATLAS detector. ***Abdualazem Fadol***	
15:45 - 16:00	187 Simulation of the strip sub-detector system in the new Inner Tracker of the ATLAS detector. ***Ryan Atkin***	361 The scissors resonance in 151Sm. ***MAGAGULA, SEBENZILE PRETTY ENGELINAH*** *(iThemba Labs and University of the Witwatersrand)*		195 Measurement of the leptonic charge asymmetry in the tri-lepton final state of ttW in proton-proton collisions at a centre-of-mass energy of 13 TeV using the ATLAS detector. ***Cameron Garvey***	
16:00 - 16:15	52 Re-designing a radiation-tolerant low voltage power supply for the ATLAS Tile Calorimeter Phase-II Upgrade. ***Edward Nkadimeng***	362 Impact of Experimentally Constrained Nuclear Level Density and Photon Strength Function of 182Hf on the Nucleosynthesis Puzzle of 182Hf. ***YENDE***		189 Search for a heavy di-photon resonance in association with b-jets with the ATLAS detector at the LHC. ***Esra Shrif***	
16:15 - 16:30	62 Quality assurance testing of the ATLAS Tile-Calorimeter Phase-II upgrade low-voltage power supplies. ***Ryan Mckenzie***	65 Search for a heavy pseudo-scalar decaying into a Z boson and another heavy scalar boson leading to four lepton final states in pp collisions at $\sqrt{s}$ = 13~TeV with the ATLAS detector. ***Ms Onesimo Mtintsilana***		186 Simplified Template Cross Section measurements of the V(H->bb) process with the ATLAS detector at sqrt(s)=13 TeV. ***Ryan Atkin***	

PHOTONICS

	26 JULY 2021	27 JULY 2021	28 JULY 2021	29 JULY 2021	30 JULY 2021
09:30 - 10:15	Opening function		Poster Session		
10:30 - 11:15	Plenary 1	Plenary 3		Plenary 5	Plenary 7
11:30 - 11:45	117 Inhibition of Lung Cancer Migration and Invasion Using a Gold NanoPhotosensitizer Conjugate. ***CROUS, Anine*** *(University of Johannesburg)*	143 Local advances in intra-cavity Laser Beam shaping. ***Dr NAIDOO, Darryl*** *(Council for Scientific and Industrial Research)*			
11:45 - 12:00	24 Nuclear translocation of Map Kinase and release of basic fibroblast growth factor following photobiomodulation at 660 nm in diabetic wounded cells. ***Mrs KASOWANJETE, Patricia*** (University of Johannesburg)				
12:00 - 12:15	27 Facilitating ladmsc Differentiation into Neuronal Cells by Photobiomodulation using Visible and Near-Infrared Wavelengths. ***Ms JANSEN VAN RENSBURG, Madeleen Clasina*** (Laser Research Centre, University of Johannesburg)	173 On the interaction of structured light fields and the atmosphere. ***KLUG, Asher*** *(University of the Witwatersrand)*			
12:15 - 12:30	92 Effects of photodynamic therapy on A375 Melanoma cells using aluminium phthalocyanine photosensitizer. ***Ms MKHOBONGO, Bridgette*** *(Laser Research Centre)*	305 Purity and Dimensionality measurements using Werner States. ***Mr NAPE, Isaac*** *(University of Witwatersrand)*, ***Mr SLABBERT, Donovan*** *(University of Witwatersrand)*, ***Prof. FORBES, Andrew*** *(University of Witwatersrand)*	Plenary (WiPiSA)		
12:30 - 12:45	56 Targeted photodynamic treatment of colorectal cancer. ***NKUNE, Nkune*** *(Laser Research Centre, University of Johannesburg)*	299 Amplification of structured light in end-pumped solid-state amplifiers. ***HARRISON, Justin***			
12:45 - 13:00	274 Effect of Gold Nanoparticle-Hypericin Mediated Photodynamic Therapy on breast Cancer Cells. ***MOKOENA, Dimakatso*** *(UJ Laser Research Center)*	278 Effects of Atmospheric Turbulence on Hermite Gaussian Modes via Convolutional Neural Networks. ***Mrs ADEWALE, Kemi*** *(University of KwaZulu-Natal, Durban, South Africa)*			
13:00 - 14:00	***LUNCH BREAK***	***LUNCH BREAK***	***WiPiSA LUNCH***	***LUNCH BREAK***	***LUNCH BREAK***
14:00 - 14:45	Plenary 2	377 *Metamaterials for extreme optics.* ***Prof. MAZUR, Eric***	Poster session *(judging)*	Plenary 6	Plenary 8
15:00 - 15:15	76 Intelligent and efficient dual-wavelength ghost imaging. ***MOODLEY, Chané Simone*** *(University of the Witwatersrand)*	331 Stokes polarimetry performed with a digital micromirror device ***DUDLEY, Angela*** *(CSIR National Laser Centre)*			Annual General Meeting (AGM)
15:15 - 15:30	226 Light Sheet Microscope Development. ***BADRODIEN, Imraan*** *(Stellenbosch University)*	230 ACCELERATING POLARIZATION STATES AND STRUCTURES TAVARES. ***BUONO, Wagner*** *(University of the Witwatersrand)*			
15:30 - 15:45	232 Fluorescence spectroscopy of quantum dots in an optical tweezer. ***Ms KRITZINGER, Ané*** *(Chemistry Department, University of Pretoria, Pretoria, South Africa)*	190 Generation of a Hybrid Mode Vector Beam. ***Ms DROZDOV, Alice Vadimovna*** *(University of the Witwatersrand)*			
15:45 - 16:00	133 Investigating optically trapped spherical particles by Mie scattering. ***ERASMUS, Anneke*** *(Stellenbosch University)*	258 Beam shaping applied to Spontaneous Parametric Down-Conversion. ***LOVEMORE, Michael (SPDC)*** *(Univeristy of the Witwatersrand)*			
16:00 - 16:15	134 Experimental Validation of Novel Point Spread Function Models. ***Ms HOLINIRINA DINA MIORA, Ratsimandresy*** *(Stellenbosch University and Friedrich Schiller University Jena)*	235 Changing colour for detecting spatial structures of light. ***SEPHTON, Bereneice*** *(University of the Witwatersrand)*			
16:15 - 16:30	145 Comparison of different techniques for resonance ionization spectroscopy and report on progress towards its application on tin isotopes. ***Mr WASO, Frederick*** *(Stellenbosch University)*	251 Quantitative measurements of the purity and dimensionality of high dimensional entagled states. ***Mr NAPE, Isaac*** *(Structured Light Lab, School of Physics, University of Witwatersrand)*			

CONDENSED MATTER AND MATERIALS

26 JULY 2021

09:30 - 10:15	Opening function
10:30 - 11:15	Plenary 1
11:30 - 11:45	234 Nanostructured meta-surfaces for arbitrarily structured twisted light: ***SEPHTON, Bereneice*** *(University of the Witwatersrand)*
11:45 - 12:00	175 Magnetic and physical properties of the Shastry-Sutherland compound Pr2Pd2In: ***DJOUMESSI FOBASSO, Redrisse*** *(Highly Correlated Matter Research Group, Physics Department, University of Johannesburg)*
12:00 - 12:15	231 Elastic and Magnetic properties of Tb-MnO based Thin Films: ***Mr MWENDWA, Geoffrey*** *(School of Physics, Material Physics Research Institute, University of the Witwatersrand, Private Bag 3, 2050, South Africa)*
12:15 - 12:30	222 Impact of helium (He) in the migration of strontium implanted 6H-SiC: ***MOKGADI, Thapelo Freddy*** *(University of Pretoria)*
12:30 - 12:45	166 STRUCTURAL AND OPTICAL CHARACTERIZATION OF BETA-GALLIUM OXIDE: ***Mr MURAMBA, Valentine*** *(University of Pretoria)*
12:45 - 13:00	255 Effect of Eu3+ concentration on the BaAl2O4/CaAl4O7:x% Eu3+ (0 ≤ x ≤5.5) mixed phases nanophosphors synthesized using citrate sol-gel method: ***Mr MAHMAN, Bamba*** *(SMU)*
13:00 - 14:00	***LUNCH BREAK***
14:00 - 14:45	375 Vibrant Color Centers in Diamond Particles: Production and Perspective: ***Dr SHENDEROVA, Olga***
15:00 - 15:15	181 Spin-imbalances in atomistic systems: Using non-equilibrium Green's function density functional theory to model spin-selective phenomena mediated by spin-orbit coupling in non-magnetic materials: ***DEDNAM, Wynand*** *(University of South Africa)*
15:15 - 15:30	81 Effect of 6.25 at.% Ta on TiPtCo Shape Memory Alloy: ***Mr BALOYI, Mphamela Enos*** *(University of Limpopo)*
15:30 - 15:45	198 Experimetal and Density Functional Theory Comparison Study of Xanthate, Dithiocarbamate and Dithiophosphate Adsorption on Sperrylite Surface: ***NEMUTUDI, Bradley*** *(University of Limpopo)*
15:45 - 16:00	227 Ab-initio study of ethylene carbonate adsorption on the major α-Al2O3 (0001) surface: ***RAMOGAYANA, Brian*** *(UL)*
16:00 - 16:15	292 The Mechanical Properties Study of Li1+XMn2O4, 0 ≤ X ≤ 1 Cathode Materials: Ms ***BEAUTY, Shibiri*** *(University of Limpopo)*
16:15 - 16:30	296 Evaluating the growth/evolution of Ti5 cluster in LiCl medium. ***Ms MAZIBUKO, Andile*** *(University of Limpopo)*

27 JULY 2021

09:30 - 10:15	
10:30 - 11:15	Plenary 3
11:30 - 11:45	100 Heavy Ion Beam Induced Sputtering of Thin Film Indium Tin Oxide at MEV SIMS Energies. ***Mr MAFA, Grant Tshepo*** *(Tshwane University of Technology & iThemba LABS TAMS)*
11:45 - 12:00	101 Surface, structural, and optical investigations of heavy ion-irradiated polyaniline thin films. ***Ms SEGOLA, Ingrid Kutlwano*** *(TUT/iThembaLABS)*
12:00 - 12:15	104 Heavy Ion Beam Analaysis of Ion Implanted Polymer Nanocomposites. ***MASHAMBA, Dakalo*** *(Tshwane University of Technology)*
12:15 - 12:30	162 The study of amorphous GaAs following Ar+ and Si+ implantation. ***MPATANI, Ongeziwe*** *(Wits School of Physics)*
12:30 - 12:45	176 Multiband superconductivity in the doped Skutterudite compound Pr0.5La0.5Pt4Ge12. ***Mr KATAMETSI, Masego*** *(University of Johannesburg)*
12:45 - 13:00	207 Investigation of a novel iron-based cubic compound RhFe3C. ***MAGODA, Nyawasedza***
13:00 - 14:00	***LUNCH BREAK***
14:00 - 14:45	Plenary 4
15:00 - 15:15	160 Atomistic Simulation Study of Li-richLi1.2Mn0.8O2 Cathode Materials. ***Mr TSEBESEBE, Nkgaphe*** *(University of Limpopo)*
15:15 - 15:30	284 Computational Modelling Study of Structure and Stoichiometry of Ta Doped Tetragonal Li7La3Zr2O12 Oxide Garnet for Solid State Batteries. ***Ms MAPHOTO, Refiloe***
15:30 - 15:45	312 Computational Modelling Study on Stability of Li₂MnO₃ Cathode Material for Lithium-Ion Batteries. ***MPHAHLELE, Mamonamane*** *(University of Limpopo)*
15:45 - 16:00	314 The simulated synthesis of nanostructured Li2MnO3 cathode materials. ***Mrs MOGASHOA, Tshidi*** *(UL)*
16:00 - 16:15	315 First-Principles DFT Study on the Effect of Lithiation on the Spinel LixMn2O4 Structure: Calibration of CASTEP and ONETEP Simulation Codes. ***HLUNGWANI, DONALD*** *(University of Limpopo Physics Department)*
16:15 - 16:30	

28 JULY 2021

09:30 - 10:15	Poster Session
10:30 - 11:15	Plenary (WiPiSA)
11:30 - 11:45	
11:45 - 12:00	
12:00 - 12:15	
12:15 - 12:30	
12:30 - 12:45	
12:45 - 13:00	
13:00 - 14:00	***WiPiSA LUNCH***
14:00 - 14:45	Poster session *(judging)*
15:00 - 15:15	
15:15 - 15:30	
15:30 - 15:45	
15:45 - 16:00	
16:00 - 16:15	
16:15 - 16:30	

29 JULY 2021

09:30 - 10:15	
10:30 - 11:15	Plenary 5
11:30 - 11:45	204 Investigating the effect of heat transfer on immersion behavior of plasma sprayed HAp coatings deposited on Ti-6Al-4V alloy substrates. ***DOCKRAT, Unaisa*** *(University of Pretoria)*
11:45 - 12:00	327 Synthesis and characterization of iron doped sodium and potassium titanates using the Pechini sol-gel method. ***Mr GUGA, Aluwani*** *(Nelson Mandela University)*
12:00 - 12:15	329 Analysis of varying Tb3+ concentrations on the structural and optical properties of mixed phases of CaAl2O4/Ca1.02Sr1.98Al2O4/SrAl2O4/SrO/Al2O3:x%Tb3+ (0 ≤ x ≤ 2) prepared by sol-gel method. ***Mr MABELANE, Tshepo*** *(Sefako Makgatho Health Sciences University)*
12:15 - 12:30	330 Effect of annealing time on the structure, morphology and optical properties of mixed phases of barium and strontium aluminates doped with 0.1% Tb3+ prepared by citrate sol-gel method. ***Mr MALULEKA, Mpho*** *(Sefako Makgatho Health Sciences University)*
12:30 - 12:45	
12:45 - 13:00	
13:00 - 14:00	***LUNCH BREAK***
14:00 - 14:45	Plenary 6
15:00 - 15:15	
15:15 - 15:30	
15:30 - 15:45	
15:45 - 16:00	
16:00 - 16:15	
16:15 - 16:30	

30 JULY 2021

09:30 - 10:15	
10:30 - 11:15	Plenary 7
11:30 - 11:45	19 Theoretical Modeling of High Entropy Alloys. ***Dr NOLTING, Volkmar*** *(Vaal University of Technology)*
11:45 - 12:00	88 Charge transfer mechanism and recombination process of hybrid perovskite solar cell. ***Dr OLALERU, Akin*** *(University of venda, South Africa)*
12:00 - 12:15	144 Elastic recoiled detection analysis (ERDA) and Rutherford Backscattering Spectrometry (RBS) investigation of hydrogenated Pd/Ti/Pd multilayer system. ***MTSHALI, Christopher*** *(iThemba LABS)*
12:15 - 12:30	277 The influence of thermal annealing on defects induced in Xe implanted n-type 4H-silicon carbide. ***Dr OMOTOSO, Ezekiel*** *(Department of Physics, University of Johannesburg)*
12:30 - 12:45	294 Studying limestone pores using Small Angle Scattering techniques. ***MOSETE, Ntombizodwa***
12:45 - 13:00	
13:00 - 14:00	***LUNCH BREAK***
14:00 - 14:45	Plenary 8
15:00 - 15:15	Annual General Meeting (AGM)
15:15 - 15:30	
15:30 - 15:45	
15:45 - 16:00	
16:00 - 16:15	
16:15 - 16:30	

ASTROPHYSICS

26 JULY 2021

09:30 - 10:15	Opening function
10:30 - 11:15	Plenary 1
14:00 - 14:45	Plenary 2

LUNCH BREAK 13:00 - 14:00

27 JULY 2021

10:30 - 11:15	376 Can MeerKAT unveil the last of the secrets about galaxy overdensities obscured by the Milky Way. ***Prof. KRAAN-KORTEWEG, Renee***
11:30 - 11:45	112 Time-Dependent Modeling of Blazar Spectral Variability with Diffusive Shock Acceleration. ***BOTTCHER, Markus*** *(University of North West)*
11:45 - 12:00	320 Monte-Carlo Applications for Partially Polarized Inverse External-Compton Scattering (MAPPIES). ***DREYER, Lente*** *(North-West University)*
12:00 - 12:15	218 Modelling the Spectral Energy Distributions and Multi-Wavelength Polarisation of Blazars. ***SCHUTTE, Hester*** *(NWU Potchefstroom)*
12:15 - 12:30	346 Simulations of Stochastic Long-Term Variability in Leptonic Models for External-Compton and Synchrotron Self-Compton Dominated Blazars. ***THIERSEN, Hannes*** *(NWU)*
12:30 - 12:45	120 Optical emission line properties of some little-known Narrow Line Seyfert 1 galaxies. ***Mr PAUL, Bynish*** *(Dept. Physics, University of Johannesburg & SAAO)*
12:45 - 13:00	150 A multi-band view on the evolution of group central galaxies. ***KOLOKYTHAS, Konstantinos*** *(North-West University)*

LUNCH BREAK

14:00 - 14:45	Plenary 4
15:00 - 15:15	118 A Study of The Lobes of Radio Galaxy Hydra A using MeerKAT Observations. ***NAIDOO, Mika*** *(The University of the Witwatersrand)*
15:15 - 15:30	72 Probing Dark Matter in the Madala Model using MeerKAT. ***TEMO, Ralekete*** *(School of Physics and Centre for Astrophysics, University of the Witwatersrand)*
15:30 - 15:45	223 Potential of the MeerKAT telescope to detect the stimulated decay of axion-like particles. ***AYAD, Ahmed*** *(University of the Witwatersrand)*
15:45 - 16:00	79 Using Asymptotic Matching to Study Accretion Disks. ***Dr TARRANT, Justine*** *(University of the Witwatersrand)*
16:00 - 16:15	324 Dark-fluid constraints of shear-free universes. ***Dr ELMARDI, Maye*** *(Center for Space Research, NWU)*
16:15 - 16:30	75 Diffusing assumptions in astroparticle physics. ***SARKIS, Michael*** *(University of the Witwatersrand)*

28 JULY 2021

Poster Session

Plenary (WiPiSA)

WiPiSA LUNCH

Poster session *(judging)*

29 JULY 2021

Plenary 5

110	Galaxy Evolution in the Local Universe: Studying the Complete Local-Volume Groups Sample (CLoGS). ***Mr STEVENS, Clinton*** *(Centre for Space Research, North-West University)*
85	Simulating the enrichment of cosmological gas. ***HOUGH, Renier*** *(North-West University)*
135	Spatio-Kinematics of the Massive Star Forming Region NGC6334I during a Episodic Accretion Event. ***Mr VORSTER, Jakobus*** *(Centre for Space Research)*
309	A Monte Carlo simulation study of the excitation of molecules in high mass star forming regions. ***MFULWANE, Lebogang***
242	Bow shocks formed by massive runaway stars in 3D. ***RAMALATSWA, Katlego*** *(University of Cape Town)*
259	Capturing Transients -- From Biostatistics to Astronomy. ***VAN DYK, Anke*** *(University of Cape Town/SAAO)*

LUNCH BREAK

Plenary 6

317	Shaken, not stirred: test particles in binary black hole mergers. ***VAN DER MERWE, Pieter*** *(North-west University, Center for Space Research)*
323	Satellite contamination on Single Dish HI Intensity Mapping with MeerKAT. ***ENGELBRECHT, Brandon*** *(University of the Western Cape)*
313	Assessing TeV Visibility of Pulsars. ***VENTER, Christo*** *(North-west University, Potchefstroom Campus)*
334	Eliminating single-band dominance in dual-band pulsar light curve fitting. ***SEYFFERT, Albertus*** *(Centre for Space Research, North-West University)*
130	Constraining the magnetic field geometry of millisecond pulsar PSR J0030+0451 using NICER and Fermi data. ***KUNDU, Anu*** *(Centre for Space Research, North-West University)*
200	Phase-resolved polarimetric constraints on the white dwarf pulsar in AR Sco. ***DU PLESSIS, Louis*** *(NWU, Potchefstroom, Department of Physics)*

30 JULY 2021

Plenary 7

LUNCH BREAK

Plenary 8

Annual General Meeting (AGM)

SPACE SCIENCE

	26 JULY 2021	27 JULY 2021	28 JULY 2021	29 JULY 2021	30 JULY 2021
09:30 - 10:15	Opening function		Poster Session		
10:30 - 11:15	Plenary 1	Plenary 3		Plenary 5	Plenary 7
11:30 - 11:45					210 Remote sensing of atmospheric Aerosol Optical Depth. ***Mrs FANISO, Zimbini*** *(CSIR)*
11:45 - 12:00					47 Solar modulation of Helium isotopes from minimum to maximum activity. ***NGOBENI, Donald*** *(Centre for Space Research, North-West University)*
12:00 - 12:15					206 Aviation dosimetry science in South Africa. ***MOSOTHO, Godfrey*** (North-West University)
12:15 - 12:30			Plenary (WiPiSA)		126 Obliquely propagating solitons and supersolitons in magnetized three-component plasmas with adiabatic ions and two-temperature electrons. ***Dr SINGH, Shivani*** *(SANSA)*
12:30 - 12:45					202 Energy deposition through Landau damping. ***BOTHA, Gert*** *(Northumbria University)*
12:45 - 13:00					209 Simulations of coronal loops undergoing transverse decay-less oscillations. ***KARAMPELAS, Konstantinos*** *(Northumbria University)*
13:00 - 14:00	***LUNCH BREAK***	***LUNCH BREAK***	***WiPiSA LUNCH***	***LUNCH BREAK***	***LUNCH BREAK***
14:00 - 14:45	Plenary 2	Plenary 4		Plenary 6	Plenary 8
15:00 - 15:15			Poster session *(judging)*		Annual General Meeting (AGM)
15:15 - 15:30					
15:30 - 15:45					
15:45 - 16:00					
16:00 - 16:15					
16:15 - 16:30					

PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH

26 JULY 2021

09:30 - 10:15 — Opening function

10:30 - 11:15 — Plenary 1

11:30 - 11:45

371 Advanced Electronics in South Africa:

Speaker: ***Benjamin Hlope***, Director of Technology Operations at Kutleng Engineering Technologies.

USMAN, Iyabo *(University of the Witwatersrand, Johannesburg)*

11:45 - 12:00

12:00 - 12:15

372 Data Convergence, a showcase of incubation in Artificial Intelligence:

Speaker: ***Dominque Adams***, Project manager at Data Convergence.

USMAN, Iyabo *(University of the Witwatersrand, Johannesburg)*

12:15 - 12:30

12:30 - 12:45

373 Bridging the gap between academia and industry:

Speaker: ***Rinae Nnduvheni***, Intelligence and Insights Lead at EY Consulting.

USMAN, Iyabo *(University of the Witwatersrand, Johannesburg)*

12:45 - 13:00

13:00 - 14:00 — ***LUNCH BREAK***

14:00 - 14:45 — Plenary 2

15:00 - 15:15

107 The impact of the field model on pre-service students' qualitative understanding of basic DC circuits. ***KHWANDA, Mphiriseni*** *(UJ)*

15:15 - 15:30

38 Online classes and the effects on conceptual understanding. ***Prof. CORNELL, Alan***

15:30 - 15:45

182 Unlocking Education lockdown with the iNethi platform. ***JOHNSON, David*** *(University of Cape Town)*

15:45 - 16:00

276 Grey Rationale Analysis for the sustainable rural community project success in Manghweni community, Limpopo: A physics approach. ***Mr MALULEKE, Ndzalama Heighton*** *(University of Johannesburg)*

16:00 - 16:15

106 Cascade Outreach model. ***ODMAN, Carolina*** *(Inter-University Institute for Data Intensive Astronomy, University of the Western Cape)*

16:15 - 16:30

125 Science for Development at Honours level. ***ODMAN, Carolina*** *(Inter-University Institute for Data Intensive Astronomy, University of the Western Cape)*

27 JULY 2021

Plenary 3

21 THE INFLUENCE OF LOCATION AND GENDER ON SHAPING STUDENT PERFORMANCE IN PHYSICS. ***SADARE, oluseye***

74 Classification of Sound Conceptions. ***Dr FISH, Derek*** *(University of Zululand)*

82 The effects of global radical changes on students' attitudes in the new mode of teaching and learning. ***Mr MOLEFE, Paul*** *(University of Johannesburg)*, ***SONDEZI, Buyi*** *(University of Johannesburg)*

48 Teaching measurement and uncertainty the SI way. ***Prof. BUFFLER, Andy*** *(University of Cape Town)*

300 Evolution of the 3rd Year Major Project at WITS. ***KEARTLAND, Jonathan*** *(University of the Witwatersrand)*

LUNCH BREAK

Plenary 4

303 Using the Arduino in the laboratory. ***LEMMER, Miriam*** *(North-West University (Potchefstroom))*

127 GRADE 11 PHYSICAL SCIENCES LEARNERS' PERCEPTIONS OF SCIENTIFIC INQUIRY. ***Mrs ZUNGA, Rosemary*** *(University of Johannesburg)*

266 South Africa and the Joint Data-backed Study of Publication Patterns of the Global Gender Gap project. ***GLEDHILL, Irvy*** *(Igle) (U. Witwatersrand)*

289 Leveraging Artificial Intelligence and Quantum Machine Learning for economic growth in Africa. ***Mr KARABO, Keaotshepha***

108 DOING DIGITAL OFFLINE – THE COVIDEO ***PROJECT. FISH, Derek*** *(University of Zululand)*

262 Quantum technology: A potential tool for development in Africa. ***Dr SENEKANE, Makhamisa*** *(Institute for Intelligent Systems, University of Johannesburg, South Africa)*

28 JULY 2021

Poster Session

Plenary (WiPiSA)

WiPiSA LUNCH

Poster session *(judging)*

29 JULY 2021

Plenary 5

151 10 years of Astronomy for Development. ***GOVENDER, Kevindran*** *(South African Astronomical Observatory)*

163 Music, Context-Based Inquiry and Computer Simulation as Engagement Strategy. ***Mrs DJAN, Grace*** *(SAIP, North West University, SAASTE, STERS)*

211 Science teachers' beliefs about the impact of 4IR on their classroom practices. ***MAVURU, Lydia*** *(University of Johannesburg)*

336 First year physics students perception of online learning. ***Dr HERBERT, Mark*** *(University of the Western Cape)*

335 Modular logic gate emulator for online laboratory. ***Dr MARIOLA, Marco*** *(University Of Kwazulu Natal)*

338 The SAIP Benchmark Statement and Physics Graduate Preparedness: A Case Study of University of the Western Cape. ***AUDU, Bako Nyikun*** *(University of the Western Cape)*

LUNCH BREAK

378 Transduction: towards a better understanding of how students learn physics. ***Dr VOLKWYN, Trevor***

339 Creating the Support for High School After-Hour-Tutorial Programme: A Pilot Study. ***AUDU, Bako Nyikun*** *(University of the Western Cape)*

295 Quantum Computing in the Industry 4.0: A Review and Applications. ***Ms GOSENYANG, Tshepiso Amber*** *(Botswana International University of Science and Technology)*

286 Inaugural Quantum Computing School in Lesotho: Its impact and the Lessons Learnt. ***Dr SENEKANE, Makhamisa*** *(Department of Physics and Electronics, National University of Lesotho, Roma, Lesotho)*

272 Energy assessment in tertiary institution laboratory for a sustained learning and teaching experience during COVID-19 restrictions. ***Mr SELELO, Pitsi Regan*** *(University of Johannesburg)*

285 Data Science Skills Development with Big Data Hackathons. ***MADHANPALL, Nikhita*** *(Office of Astronomy for Development)*

30 JULY 2021

Plenary 7

191 GA2024: an opportunity for physics in Africa. ***MCBRIDE, Vanessa*** *(University of Cape Town & SAAO)*

265 The global Gender Gap project: fair treatment, and some recommendations for South Africa. ***GLEDHILL, Irvy*** *(Igle) (U. Witwatersrand)*

290 Determining the water isotope compositions in the North West Province, South Africa. ***Mr MATHUTHU, Joseph*** *(North West University)*, ***Prof. MATHUTHU, Manny*** *(North West University)*, ***Mrs MOKHINE, Naomi, Dikheledi*** *(North West University)*

332 Astronomy as a tool for human capacity development: the Namibian example. ***DALGLEISH, Hannah*** *(University of Namibia)*

26 Effective remote learning. ***MAZUR, Eric*** *(Harvard University)*

LUNCH BREAK

Plenary 8

Annual General Meeting (AGM)

APPLIED PHYSICS

	26 JULY 2021	27 JULY 2021	28 JULY 2021	29 JULY 2021	30 JULY 2021
09:30 - 10:15	Opening function				
10:30 - 11:15	Plenary 1	Plenary 3		Plenary 5	Plenary 7
11:30 - 11:45		78 Heat Transfer Improvement of a Thermal Interface Material for Heat Sink Applications Using Carbon Nanomaterials. ***MOUANE, Othmane NKADIMENG, Edward*** *(University of the Witwatersrand)*		179 In situ test results for a cavity solar receiver. ***FERRER, phil*** *(wits)*	248 Characterising laser beams through tubulence using vector beams and a simple quantum trick. ***Isaac Nape***
11:45 - 12:00		98 The Physics of Vacuum Arc Propulsion Systems. ***STANSELL, Paul***	Poster Session	205 Injection dependent dark IR imaging of PV modules as an alternative to EL imaging for individual cell characterisation. ***Dr DIX-PEEK, Ross*** *(Nelson Mandela University)*	121 Glancing Incidence X-ray Diffraction (GIXRD) analysis of induced nanocrystalline boron nitride (BN) on ion-implanted poly-crystalline hexagonal BN. ***Mr Lehlohonolo Lisema***
12:00 - 12:15		188 Plasma Diagnostics of Miniaturised DC Glow Discharge Thruster Concept. ***PARBHOO, Maheen*** *(University of the Witwatersrand)*, ***Prof. FERRER, Philippe*** *(University of Witwatersrand)*		214 Performance analysis of thin-film Photovoltaic (PV) technologies in an embedded generation network. ***ROODT, Roelof*** *(Nelson Mandela University)*	153 Structural and optical properties of shape-dependent gold nanoparticles. ***Ms Tlangelani Ngunyulu***
12:15 - 12:30		245 Birefringence from digital phase-shifting measurements. ***SINGH, Keshaan*** *(University of the Witwatersrand)*		386 Carbon Nanostructures beyond Graphene. ***SEIFERT, Gotthard*** *(Theoretische Chemie, Technische Universität Dresden, D-01062 Dresden, Germany)*	146 Density modified tracer particles for Positron Emission Particle Tracking (PEPT). ***Michael Mike***
12:30 - 12:45		267 Kinetics study of thiosulphate gold dissolution from primary leaching precipitates of refractory gold ores. ***Ms OWIREDU, Danielle*** *(University of Johannesburg)*	Plenary (WiPiSA)	152 Effect of methoxy functionalized group on the photocatalytic properties of diphenylaniline organic Chromophores. ***Dr ELEGBELEYE, ife Fortunate*** *(Physics department, University of Venda)*	99 Development of 18F Radiochemistry for Positron Emission Particle Tracking (PEPT). ***Ms Ameerah Camroodien***
12:45 - 13:00				220 Computational study of electronic and optical properties of graphene/brookite (210) composite. ***Mr PHUTHU, Lutendo*** *(University of Venda)*	95 Development of a digital data acquisition system for neutron metrology. ***Chloé Sole***
13:00 - 14:00	***LUNCH BREAK***	***LUNCH BREAK***	***WiPiSA LUNCH***	***LUNCH BREAK***	***LUNCH BREAK***
14:00 - 14:45	Plenary 2	Plenary 4		Plenary 6	Plenary 8
15:00 - 15:15		370 Non Specialist Presentation: Bridging scales in materials simulations Quantum versus classical simulations. ***Prof. SEIFERT, Gotthard*** *(TU Dresden)*		287 Density functional theory study of Ni doped NaMnO2 cathode material. ***RANWAHA, Tshifhiwa Steven*** *(University of Venda)*	Annual General Meeting (AGM)
15:15 - 15:30				55 Programming the load readout board micro-controllers used in the development of a Burn-In test bench for the ATLAS TileCal Phase-II Upgrade. ***NJARA, Nkosiphendule*** *(School of Physics University of the Witswatersrand)*	
15:30 - 15:45		116 Solar irradiance in Gauteng during the 2020 COVID-19 lock-down – can we detect decreased aerosol loading? ***Mr FOURIE, Charles H.*** *(Dept. Physics, University of Johannesburg)*	Poster session *(judging)*	58 The characterization and functionality of the interface boards used on the burn-in test station for the ATLAS Tile Calorimeter Low Voltage Power Supplies phase II upgrade. ***LEPOTA, Thabo*** *(University of the Witwatersrand)*	
15:45 - 16:00				201 Spatial resolution in positron emission particle tracking (PEPT). ***LEADBEATER, Thomas*** *(University of Cape Town)*	
16:00 - 16:15		155 Optimization of processing parameters of dip coated CuO films for photoelectrochemical water-splitting. ***MOSALAKGOTLA, Mano***		156 A new instrumental activation analysis facility at UCT. ***MHLONGO, Sizwe*** *(University of Cape Town)*	
16:15 - 16:30		316 An experimental study of a combined solar cooking and thermal energy storage system for domestic applications. ***Mr LENTSWE, Katlego*** *(NWU)*		174 Enhancing PEPT: high fidelity analysis with augmented detection. ***Mr VAN DER MERWE, Robert*** *(University of Cape Town)*	

THEORETICAL AND COMPUTATIONAL PHYSICS

	26 JULY 2021	27 JULY 2021	28 JULY 2021	29 JULY 2021	30 JULY 2021
09:30 - 10:15	Opening function		Poster Session		
10:30 - 11:15	374 Relativistic Fluid Dynamics for Nuclear Matter under Extreme Conditions in Heavy-Ion Collisions and Astrophysics: ***Prof. MURONGA, Azwinndini***	Plenary 3		Plenary 5	Plenary 7
11:30 - 11:45	41 Generating function approach to open quantum walks: ***Mr ZUNGU, Ayanda*** *(Department of Physics, North-West University, Mafikeng Campus)*	310 Cosmological Models in Gravitational Scalar-Tensor Theories: ***ABDULRAHMAN, Heba*** *(North West University, South Africa)*			
11:45 - 12:00	89 Generation of GHZ states via projected squeezed states: ***Mr ALEXANDER, Byron*** *(Stellenbosch University)*	178 Bianchi Type V Model In R^n Gravity: A Dynamical System Approach: ***TSABONE, Thato*** *(North-West University)*			
12:00 - 12:15	344 Imaging with moving detectors: ***BORNMAN, Nicholas*** *(University of the Witwatersrand)*	39 Quasinormal modes in the large angular momentum limit: an inverse multipolar expansion analysis: ***CHRYSOSTOMOU, Anna*** *(University of Johannesburg)*			
12:15 - 12:30	249 Three-party reference frame independent quantum key distribution with an imperfect source: ***SEKGA, Comfort*** *(Department of Physics and Astronomy, Botswana International University for Science and Technology, Private Bag 16 Palapye, Botswana)*	270 Quantum Entanglement and relativistic quantum mechanics: ***HARTMAN, Jonathan*** *(University of Johannesburg)*	Plenary (WiPiSA)		
12:30 - 12:45	42 Solving the Schrödinger equation for Hydrogen Molecular ion (H2+) using Sinc functions and ampolying both Python and Numpy: ***EZENWACHUKWU, OBIAGELI LOVENDA*** *(University of South Africa (UNISA))*	269 An alternative test of Bell's theorem? (15 minutes): ***KONRAD, Thomas*** *(UKZN)*			
12:45 - 13:00	159 Motor Protein Transport on Cytoskeleton Networks: ***DEMPERS, Nadine*** *(Department of Physics, Stellenbosch University and National Institute of Theoretical Physics)*	261 Comment on the Quantum Supremacy Claim by Google: ***SEGIREDDY, Anirudh Reddy*** *(University of KwaZulu-natal)*			
13:00 - 14:00	***LUNCH BREAK***	***LUNCH BREAK***	***WiPiSA LUNCH***	***LUNCH BREAK***	***LUNCH BREAK***
14:00 - 14:45	Plenary 2	Plenary 4	Poster session *(judging)*	Plenary 6	Plenary 8
15:00 - 15:15	306 Factorization in Heavy Ion Collisions: ***HOROWITZ, William*** *(University of Cape Town)*				Annual General Meeting (AGM)
15:15 - 15:30	273 B and D meson Suppression and Azimuthal Anisotropy in a Strongly Coupled Plasma at $\sqrt{s_{NN}}=5.5$ TeV: ***NGWENYA, Blessed*** *(University of Cape Town)*				
15:30 - 15:45	23 Fitting the relic density with contributions from dimension-five operators: ***MASON, Lara*** *(University of Johannesburg)*				
15:45 - 16:00	69 Towards discrimination and improved modelling of dark-sector showers: ***SINHA, Sukanya*** *(The University of Witwatersrand)*				
16:00 - 16:15	80 Constraints on Dark Matter Models using current LHC Measurements: ***WILSON, Danielle*** *(University of the Witwatersrand)*				
16:15 - 16:30	115 Random Number Generation using IBM Quantum Processors: ***STRYDOM, Conrad*** *(Stellenbosch University)*				