SAIP2025 Timetable Tuesday 08 July 2025

08:30 - 09:15 (Venue: SHB5)	PLENARY - [568] Halide perovskites and related materials: A new playground of material discovery Professor SARMA, DIPANKAR DAS (Indian Institute of Science, Bengaluru, India)									
09:15 - 09:20					ather					
TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS	NUCLEAR, PARTICLE AND RADIATION PHYSICS 1	NUCLEAR, PARTICLE AND RADIATION PHYSICS 2	PHOTONICS	ASTROPHYSICS & SPACE SCIENCE	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH	APPLIED PHYSICS	THEORETICAL AND COMPUTATIONAL PHYSICS		
	(Venue: SHB5)	(Venue: SHB1)	(Venue: P114)	(Venue: SHB3)	(Venue: SHB4)	(Venue: SH6)	(Venue: SHB2)	(Venue: RS38)		
Conveners	Prof TERBLANS, J.J (University of the Free State)	Prof NTSHANGASE, Sifiso (University of Zululand)	Dr GOLOLO, Mpho (University of Johannesburg)	Dr DUDLEY, Angela (University of the Witwatersrand)	Dr STEYN, Ruhann (North-West University)	Dr. MOLEFE, Paul (University of Johannesburg)	Prof MATTHEWS, Alan (University of KwaZulu- Natal)	Prof HOROWITZ, William (University of Cape Town)		
09:20 - 09:40	[39] Influence of pressure and defects on CNT interlinking	[93] Linear polarization measurement on gamma rays from non-oriented nuclear states	[456] Highlights of ALICE results from heavy-flavour measurements at LHC energies	[15] Comparative Theoretical Analysis of Entangled Quantum States for Enhanced Sensing Application	[23] Update on the air quality dashboard development	[485] An Introduction to Quantum Computing - Teaching the Basics	[251] Synopsis of the prototype parabolic trough	[238] Shock Wave Propagation in Core-Collapse Supernovae: A One- Dimensional Study with Magnetic Fields		
	Dr VAN NIEKERK, Chani (University of the Witwatersrand)	Ms SIMILINDI, Beatrice (iThemba LABS)	Prof BUTHELEZI, Edith Zinhle (iThemba LABS)	Dr MPOFU, Kelvin (CSIR)	Dr SHIKWAMBANA, Lerato (South African National Space Agency)	Dr SURTEE, Taariq (University of the Witwatersrand)	Prof FERRER, Philippe (University of the Witwatersrand)	Prof MURONGA, Azwinndini (Nelson Mandela University)		
09:40 - 10:00	[69] Investigation of Titanium, Zirconium, Vanadium, and Palladium Multilayer Systems for Advanced Hydrogen Storage Applications	[52] Systematics study of octupole bands in rotating even-even nuclei to reveal rigid or soft octupole shape [For Award: MSc]	[229] Parton Production Spectra and Energy Loss in High-Energy 00 Collisions	[81] Rate equations for the control of Yb-171 ions [For Award: MSc]	[49] Simultaneous multiple conjugate nighttime MSTIDs observations: 4 October 2018	[21] Investigating the effect of material properties on thermal conductivity: An enquiry-based approach	[499] Characterization of a Talbot-Lau X-ray phase contrast system at the Wits Micro-CT Facility [For Award: PhD]	[417] Piston-Driven Shock Wave Test Problem for Validating Magnetohydrodynamic Models in Astrophysics [For Award: PhD]		
	Dr MTSHALI, Christopher (iThemba LABS)	Mr MUZOMUHLE, Muzomuhle (University of Zululand)	Mr ALAM, Mohammad (University of Cape Town)	Ms IYER, Abigail (Stellenbosch University)	Dr KATAMZI-JOSEPH, Zama (South African National Space Agency)	Dr MNGOMEZULU, Halalisani (University of Johannesburg)	Mr CHINAMATIRA, Gideon (University of the Witwatersrand)	Ms SEABI, Magdeline (Nelson Mandela University)		
10:00 – 10:20		[107] Electromagnetic and thermodynamic properties in the quasi-continuum of mid-mass nuclei through inverse and direct kinematics [For Award: PhD]	[344] Real-Time Anomaly Detection in High Energy Physics	[221] Decay of stationary entanglement mediated by one-dimensional plasmonic nanoarrays	[176] Investigating the influence of Boundary Layer Dynamics on Aerosol Optical Properties Using Ceilometer and Cimel Sun Photometer	[198] Transforming Physical Sciences Teaching through Targeted Professional Development	[172] Transforming Coherent Telecom Receivers into Current Sensors [For Award: PhD]	[257] Energy Loss as a Probe of Quark-Gluon Plasma Formation Across Collision System Size [For Award: PhD]		
		Mr NKALANGA, Mhlangano (University of Johannesburg)	Mr ATKIN, Ryan (University of Cape Town)	Dr UGWUOKE, Luke (Stellenbosch University)	Mrs FANISO-MNYAKA, Zimbini (Council for Scientific and Industrial Research)	Dr HERBERT, Mark (University of the Western Cape)	Ms DROZDOV, Alice (University of the Witwatersrand)	Mr FARADAY, Coleridge (University of Cape Town)		
10:20 - 10:50			Morning Tea / Coffee	Break (Solomon Mahlangu Hous	se Basement Level West Wing D	Prawing Hall - SHWWDH)				

TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS 1	PHYSICS OF CONDENSED MATTER AND MATERIALS 2	NUCLEAR, PARTICLE AND RADIATION PHYSICS 1	NUCLEAR, PARTICLE AND RADIATION PHYSICS 2	PHOTONICS	ASTROPHYSICS & SPACE SCIENCE	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH	APPLIED PHYSICS	THEORETICAL AND COMPUTATIONAL PHYSICS
Conveners	(Venue: SHB5) Prof CHAUKE, Hasani (University of Limpopo)	(Venue: P115) Dr LISEMA, Lehlohonolo (University of the Witwatersrand)	(Venue: SHB1) Dr MURULANE, Khuliso (University of Johannesburg)	(Venue: P114) Dr NKADIMENG, Edward (iThemba LABS)	(Venue: SHB3) Dr NAPE, Isaac (University of the Witwatersrand)	(Venue: SHB4) Prof HILTON, Matt (University of the Witwatersrand)	(Venue: SH6) Mr KHWANDA, Mphiriseni (University of Johannesburg)	(Venue: SHB2) Ms HOLTZHAUSEN, Adiel (Akademia)	(Venue: RS38) Prof MURONGA, Azwinndini (Nelson Mandela University)
10:50 - 11:10	[34] Quantum mechanical local energy density applied to many- electron Systems [For Award: PhD]	[74] Exploring the structural, magnetic, and elastic properties of Mn50Al50-xSnx alloys: A DFT study [For Award: MSc]	[212] Detecting Anomalies in Measured Thermal Neutron Flux Profiles of SAFARI-1 Research Reactor. [For Award: MSc]	[99] Analysis of Long- Term Stability Uncertainty in Luminosity Measurements Using the Tile Calorimeter of the ATLAS Detector for Run 3 Proton-Proton Collisions at sqrt (s) = 13.6 TeV in 2023	[381] Noisy quantum channels fail to rip the fabric of entanglement [For Award: PhD]	[379] Structure growth in the thawing dark energy models	[95] A review of upgrades to First-Year Physics Experiments to integrate digital control and utilization of more modern technology.	[181] Physical Principles to Translate from Phase Contrast Imaging to Absorption Contrast Imaging [For Award: PhD]	[62] A farewell to waves
	Ms ABDALLA, Saga (University of Witwatersrand)	Mr MOKWENA, Thabang (University of Limpopo)	Mr KGOLOBE, Rethabile (University of Johannesburg)	Dr RAPHEEHA, Phuti (University of the Witwatersrand)	Mr DINIS ORNELAS, PEDRO (University of the Witwatersrand)	Dr AKALU, Shambel (North-West University)	Dr VAN HEERDEN, Hendrik Jacobus (University of the Free State)	Mr MADURAY, Preveshin (University of Johannesburg)	Dr BECK, Geoff (University of the Witwatersrand)
11:10 - 11:30	[82] Physiochemical, optical and magnetic properties of nickelmagnesium ferrite nanoparticles for various applications [For Award: PhD]	[79] A DFT novel study on acidic and neutral arsenate and enoic/enoate collectors adsorption on spodumene and feldspar mineral surfaces [For Award: MSc]	[343] Effect of SrO on radiation attenuation properties of borotellurate glass systems at a high energy region [For Award: MSc]	[219] South Africa's Contribution to the Phase-II Upgrade of the ATLAS Hadronic Tile- Calorimeter Low-Voltage Power Supply	[413] Tunable hybrid and non-local entanglement in photon pairs [For Award: PhD]	[132] Constraints on Cosmological Parameters Using a Large Sample of Gamma-Ray Bursts with their redshift derived by Machine Learning [For Award: PhD]	[57] Effects of Learning Environments as Basis for Cognitive Achievements on the Understanding of Basic Physics Concepts	[449] Development and Qualification of a Fiber Optic Sensor Package for ITk Environmental Monitoring [For Award: PhD]	[183] Quantum Complexity in Neutrino Flavour Oscillation [For Award: PhD]
	Mr NXUMALO, Sifiso (University of KwaZulu- Natal)	Mr MATLABJANE, Lesetja (University of Limpopo)	Mr MTHALANE, Sifiso (University of Zululand)	Dr MCKENZIE, Ryan (University of the Witwatersrand)	Mr KONI, Mwezi (University of the Witwatersrand)	Ms ALDOWMA, Tamador (University of Johannesburg)	Prof SONDEZI, Buyisiwe (University of Johannesburg)	Mr UNWUCHOLA, Doomnull (University of the Western Cape)	Mr MAZWI, Luyanda (University of Johannesburg)
11:30 – 11:50	[87] Synthesis, Structural, and Gas Sensing Properties of Rare Earth-Substituted Zinc and Cobalt Ferrites: A Comparative Study [For Award: PhD]	[83] Structural, stability, and magnetic studies of polymer-coated magnesium-zinc ferrite nanoparticles synthesized via glycolthermal route [For Award: MSc]	[54] Radiological risks assessment of mining vicinities using RESRAD computer code	[336] Early Failures Detection with Machine Learning for ATLAS TileCal LVPS: The Impact of Burn-in Assessed with Test Bench Datasets	[492] Investigating Second-Order Correlation of a Single- Photon Source NV Centre under CW Excitation [For Award: MSc]	[48] An investigative numerical modelling study of galactic deuterons in the Heliosphere	[404] Trends in Mathematical and Physical Sciences Education in South Africa [For Award: Honours]	[316] Combining spheres and spirals of light for noise free communication through optical fibre [For Award: PhD]	[345] Comparative Study of Neutron and Proton Halo Breakup Cross Sections
	Mr NDLOVU, Nkanyiso (University of KwaZulu- Natal)	Mr MTHIMKHULU, Sakhile Sduduzo (University of KwaZulu- Natal)	Dr OLAGBAJU, Peter Oluwadamilare (North-West University)	Dr MOSOMANE, Chuene (iThemba Labs)	Mr BHATTACHARYYA, Shaman (University of the Witwatersrand)	Ms RAMOKGABA, Innocentia Itumeleng (North-West University)	Ms ROFHIWA, Nthangeni (University Of Venda)	Mr PETERS, Cade (University of the Witwatersrand)	Dr NDALA, Lucas Vusi (University of South Africa)
11:50 – 12:10	[89] The effect of molybdenum carbide additive on the magnetic and physical properties of Fe based NbC cermets [For Award: PhD]	[304] Defects identification in SnO2 semiconductor using positron annihilation techniques. [For Award: MSc]	[26] Alpha and Beta radiation effects on Re2MnCoO6 (Re = La, Sm, Nd) [For Award: PhD]	[367] Investigation of Radiation-Resistant Components for the TileCal-ATLAS Detector	[340] Revealing the quantum nature of a continuous laser carrying orbital angular momentum Dr MAHDAVIFAR,	[189] Constraining the Teleparallel Universe [For Award: MSc]	[558] School Learners` alternative conceptions regarding the Chemical Reaction Rate in certain Schools in the Lepelle Circuit, South Africa	[20] Energy Balance Closure Analysis Based on Eddy Covariance Flux Tower Observations [For Award: PhD]	
	Mr PETERS, Gerrard (University of the Witwatersrand)	Ms MOTJOPE, Dineo (University of Zululand)	Mr DHLIWAYO, Tinashe (University of Johannesburg)	Mr LALL, Gaurav (University of the Witwatersrand)	Moslem (University of the Witwatersrand)	Mr RUGG, Robert (North-West University)	Dr PHAGE, Itumeleng (Central University of Technology)	Mr TAKALANI, Lufuno (University of Venda)	
12:10 – 12:30	[144] Structural and Optical Investigations of Tm3+/Yb3+ Doped	[314] Electrical and structural properties in		[207] Particle Flow Algorithm (PFA) development for forward	[394] Revealing the unseen with tailored quantum light	[496] Bispectrum correlations of HI intensity mapping and			

	Yttrium Pyrogermanate	Mo-Re alloys; a study on	jet reconstruction	with [For Award: MSc]	large-scale structure					
	for Blue and NIR	their Superconductivity	the ATLAS ITk det	ector	surveys					
	Upconversion	[For Award: MSc]	setup at the HL-Li	HC						
	[For Award: PhD]		[For Award: PhD]	1						
	Dr BASINA, Veera Navee	Mr PAMHIDZAYI,	Mr LEPOTA, Thab	oo Ms NOTHLAWALA,						
	Kumar	Treatwell	James	Fazilah	Dr AICH, Moumita					
	(University of the Free	(University of	(University of the	(University of the	(University of					
	State)	Johannesburg)	Witwatersrand)	Witwatersrand)	Witwatersrand)					
12:30 - 12:35				Breather						
12:35 – 13:45		Lunch (Main Dining Hall - Matrix Student Centre)								
13:45 – 13:50	Breather									

13:50 – 14:35	14:35 PLENARY - [564] Generation and detection of light at the single photon level									
(Venue: SHB5)				(KTH Royal Ins	Professor ZWILLER, VAL stitute of Technology, Stock	holm, Sweden)				
14:35 – 14:40					Breather					
TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS 1 (Venue: SHB5) Prof JILI, Thulani (University of Zululand)	PHYSICS OF CONDENSED MATTER AND MATERIALS 2 (Venue: P115) Dr MAPASHA, Edwin (University of Pretoria)	NUCLEAR, PARTICLE AND RADIATION PHYSICS 1 (Venue: SHB1) Dr JONES, Pete (iThemba LABS)	NUCLEAR, PARTICLE AND RADIATION PHYSICS 2 (Venue: P114) Prof BUTHELEZI, Edith Zinhle (iThemba LABS)	(Venue: SHB3) Dr BOSMAN, Gurthwin (Stellenbosch University)	ASTROPHYSICS & SPACE SCIENCE (Venue: SHB4) Dr AICH, Moumita (University of the	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH (Venue: SH6) Prof KEARTLAND, Jonathan	(Venue: SHB2) Prof VAN DYK, Ernest (Nelson Mandela	THEORETICAL AND COMPUTATIONAL PHYSICS (Venue: RS38) Dr TSHIPI, Tshegofatso (Sol Plaatje University)	
						Witwatersrand)	(University of the Witwatersrand)	University)		
14:40 – 15:00	[158] Investigation of Biomimetic Coatings on Glassy Carbon and Ti-6Al- 4V Substrates: Impact of Varying Surface Preparation Methods [For Award: PhD]	[382] Comparative Analysis of Co- precipitation and Sol-Gel derived Sm2Ni2O5 nanoparticles: Structural, Chemical, Thermodynamic, and Magnetic Properties [For Award: MSc]	[502] Radiation contamination in gold mine tailings soil samples using HPGe spectrometry	[237] Overview of the current status of the High Granularity Timing Detector for the ATLAS phase 2 upgrade	[119] Crafting Optical Neural Networks Using Multimode Fibre [For Award: MSc]	[112] Response of lonospheric Topside Electron Density during Solar Flares [For Award: MSc]	[199] Attitudes and Approaches to Problem Solving as Predictors of Physics Achievement Among First-Year Students	[511] Design of an INVELOX based wind delivery system for low wind speed application. [For Award: PhD]	[247] Classical and Quantum Mechanics of Non-holonomic Constraints	
	Ms DOCKRAT, Unaisa (University of Pretoria)	Ms CELE, Khethiwe (University of Johannesburg)	Mr MVELASE, M.J. (University of Johannesburg)	Dr MAZINI, Rachid (University of the Witwatersrand)	Mr RAWLINGS, Christopher (University of the Witwatersrand)	Mr MONONTSI, Kenny (North-West University)	Dr HERBERT, Mark (University of the Western Cape)	Mr CHITURA, Anesu (University of Fort Hare)	Prof HOROWITZ, William (University of Cape Town)	
15:00 – 15:20	[165] Effect of metal ions of different oxidation states Mx+ (x = 1 to 4) on the photoluminescence properties of Zn4B6O13:Eu3+ phosphor material [For Award: PhD]	[399] Influence of SrO Concentration on Radiation Shielding Efficiency of Boro- Tellurate Glasses at High Photon Energies [For Award: MSc]	[129] The low-lying electric dipole strength in nuclei: the role of deformation	[204] Ongoing validation of the High Granularity Timing Detector (HGTD) demonstrator for the ATLAS phase II upgrades [For Award: PhD]	[120] Manipulating Modes in Mulitmode Fibres with Magnets [For Award: MSc]	[214] Exploring Long- term trends in total electron content over South Africa [For Award: MSc]	[332] Pre-service students' misconceptions about simple electric circuits	[406] Quantum state reconstruction on a quantum computer [For Award: PhD]	[296] Solving the one- dimensional Schrodinger equation using a set of Daubechies wavelet scaling functions [For Award: PhD]	
	Mr MALEHO, Edwin T. (University of Johannesburg)	Mr MTHALANE, Sifiso (iThemba LABS)	Dr PELLEGRI, Luna (University of the Witwatersrand)	Mr LEPOTA, Thabo James (University of the Witwatersrand)	Mr SHARIF, Mohammed Raiyan (University of the Witwatersrand)	Mr MOKAILA, Modiri (North-West University)	Mr KHWANDA, Mphiriseni (University of Johannesburg)	Mr KONI, Mwezi (University of the Witwatersrand)	Mrs EZENWACHUKWU, Obiageli (University of South Africa)	
15:20 – 15:40	[205] Investigation of the transport properties of Co2Ti(1-x)Cr(x)Al (x = 0, 0.25, 0.5, 0.75, 1) Heusler compounds [For Award: PhD]	[491] Ultra-low temperature transport property measurement of nanocrystalline diamond films [For Award: MSc]	[91] Nuclear structure investigations via the (p,d) neutron removal reaction	[27] pQCD energy loss calculation for small systems [For Award: MSc]	[195] Deep Learning the Digital Twin of Bent Optical Fibre [For Award: MSc]	[222] Investigation of Altitude and Solar Cycle Variation of DDM Occurrence Using Ionosonde Observations [For Award: MSc]	[210] Reimagining Curriculum Renewal: A case study of Physics and Astronomy	[480] Benchmarking Quantum Phase Recognition with a Novel Quantum Convolutional Neural Network [For Award: PhD]	[196] Analytical Regularization [For Award: MSc]	

	Mr MULIBANA, Murei	Mr BHATTACHARYYA,		Mr VAN DEN BERG,	Mr JANDRELL, Joshua	Mr KHOZA,	Ms AUDU, Bako Nyikun	Mr DAKA, Chisomo		
	(University of	Shaman	Dr NEVELING, Retief	Dario	(University of the	Fanelesibonge	(University of the	(University of the	Mr BATH, Jarryd	
	Johannesburg)	(University of the	(iThemba LABS)	(University of the	Witwatersrand)	(University of KwaZulu	Western Cape)	Witwatersrand)	(University of Pretoria)	
		Witwatersrand)		Witwatersrand)		Natal)				
15:40 – 16:10	Afternoon Tea / Coffee Break (Solomon Mahlangu House Basement Level West Wing Drawing Hall - SHWWDH)									

	PHYSICS OF CONDENSED	PHYSICS OF CONDENSED	NUCLEAR, PARTICLE AND	PHOTONICS	ASTROPHYSICS & SPACE	PHYSICS FOR	APPLIED PHYSICS	THEORETICAL AND		
TDACK	MATTER AND MATERIALS 1	MATTER AND MATERIALS 2	RADIATION PHYSICS		SCIENCE	DEVELOPMENT, EDUCATION		COMPUTATIONAL PHYSICS		
TRACK						AND OUTREACH				
	(Venue: SHB5)	(Venue: P115)	(Venue: SHB1)	(Venue: SHB3)	(Venue: SHB4)	(Venue: SH6)	(Venue: SHB2)	(Venue: RS38)		
	Prof MAENETJA, Khomotso	Dr MASENDA, Hilary	Dr JONES, Pete	Prof NEETHLING, Pieter	Dr BECK, Geoff	Dr HERBERT, Mark	Prof DERRY, Trevor	Dr VAN LEUVEN, Sam		
Conveners	(University of Limpopo)	(University of the	(iThemba LABS)	(Stellenbosch University)	(University of the	(University of the Western	(University of the	(University of the		
		Witwatersrand)			Witwatersrand)	Cape)	Witwatersrand)	Witwatersrand)		
	[256] Computational study	[514] DFT-based evaluation	[19] Radiological health risk	[305] Getting to know the	[445] Tracing the origin of	[330] Assessing First Year	[243] Deep Learning for High	[266] From Matrices to		
	of TiNbVZrX (X= Hf, Cr)	of Li2Mn03 as a promising	assessment of powdered	elegance of Laguerre-Gauss	radio emission in galaxies	Students' Epistemological	Throughput Decision Making	Spacetime: Probing		
	refractory high entropy	cathode coating material for	and liquid milk in South	beams	with MIGHTEE	Beliefs about Learning	on Diamond	Symmetry Breaking in the		
	Alloys	lithium-ion batteries	Africa: A study on activity	[For Award: MSc]		Physical Science	Content of PET Activated	Type IIB Matrix Model		
16:10 16:20	[For Award: PhD]	[For Award: MSc]	concentration levels of				Kimberlite Rocks			
16:10 – 16:30			226Ra, 238U, 232Th, 40K and 137Cs				[For Award: PhD]			
	Ms MOTSOMONE,		Dr JOHN, Samuel Odumu	Mr COCOTOS, Vasili		Dr MOLEFE, Paul	Mr BROOK, Tim	Dr JOSEPH, Anosh		
	Lebogang	Ms KGASAGO, MOGAU	Ogana	(University of the	Dr KOLWA, Sthabile	(University of	(University of	(University of the		
	(University of Limpopo)	(University of Limpopo)	(North-West University)	Witwatersrand)	(University of South Africa)	Johannesburg)	Johannesburg)	Witwatersrand)		
	[264] Silver (Ag) co-	[526] Magnetic Properties of		[333] Nonlinear modal	[153] Searching for	[339] An optical approach to	[252] Density Functional	[380] The rich topological		
	implanted with helium (He) into polycrystalline SiC at	Carbon Nanospheres Synthesized by the Chemical		decomposition of structured light	persistent radio emission towards selected Fast Radio	quantum education [For Award: MSc]	Theory Study of Azo Dye Molecules Adsorbed	tapestry embedded in entangled states		
	350 °C: Structural evolution	Vapour Deposition		[For Award: PhD]	Burst positions	[FOI AWAIU. WISC]	onto Anatase TiO2 (112)	[For Award: PhD]		
	of SiC and migration	Technique		[For Award: Frib]	[For Award: MSc]		Surface for Application in	[For Award: File]		
16:30 – 16:50	behaviour of Ag after	resimique			[Dye-Sensitized Solar			
	annealing						Cells			
	[For Award: PhD]						[For Award: PhD]			
		Dr MOUANE, Othmane		Mr SINGH, Sachleen		Mr MAAKO, Cathy		Mr DINIS ORNELAS, PEDRO		
	Mr MTSI, Sive	(University of the		(University of the	Mr LETSELE, Thulo	(University of the	Ms RANDELA, Ronel Ronella	(University of the		
	(University of Pretoria)	Witwatersrand)		Witwatersrand)	(North-West University)	Witwatersrand)	(University Of Venda)	Witwatersrand)		
	[292] The electrical and	[528] Assessing the		[318] Compensating and	[185] A Search for Transient	[512] The role of laboratory	[225] DFT Study of the (210)	[297] Machine Learning		
	magnetotransport behaviour	Freysoldt, Neugebauer & van		keeping up with atmospheric	and Variable Radio Sources	demonstrators in the	TiO2 Brookite Surface Doped	Modular Forms in String		
	of layered tetragonal	de Walle (FNV) and		chaos by tailoring beams of	in the NGC 5068 field Using	learning and understanding	with V and Zr	Theory		
	SrMn2Ge2	Kumagai–Oba (KO) finite-size		light	MeerKAT MHONGOOSE	of physics and chemistry	for Application in DSSCs	[For Award: PhD]		
16:50 – 17:10	[For Award: MSc]	corrections for Ce-vacancy		[For Award: PhD]	data.	concepts	[For Award: PhD]			
		complexes in Diamond			[For Award: MSc]					
	Mr VAN DER SPUY, Arthur	Diamond				Prof SONDEZI, Buyisiwe		Mr SWAIN, Abinash		
	(University of the	Dr DEDNAM, Wynand		Mr PETERS, Cade (University	Ms TSHILENGO, Vhuthu	(University of	Mr RANWAHA, Tshifhiwa	(University of the		
	Witwatersrand)	(University of South Africa)		of the Witwatersrand)	(University Of Venda)	Johannesburg)	(University Of Venda)	Witwatersrand)		
	[317] Microstructure and	,		[324] Invariance to	[438] MeerKAT view of	<u>, </u>	[303] Volitalization of flame	[494] Testing f(Q) gravity as		
	Phase Composition of CrNiX			Randomness Using the	serendipitously discovered		retarding compounds from	a solution for the H0 and S8		
	(X = Co, Al, Mn) Low-Entropy			Topology of Light	MGCLS GRGs		firefighter bunker gear used	Tensions		
	Alloys			[For Award: MSc]			in South Africa due to	[For Award: PhD]		
17:10 – 17:30	[For Award: PhD]						thermal exposure			
							[For Award: PhD]			
	Mrs BOTSHO, Nozipho			AA- WIEINE T :	D. AMIII ALII C. N		NA: NAOVOANA N.			
	Prudence			Ms KLEINE, Tatjana	Dr MHLAHLO, Nceba		Mr MOKOANA, Vincent	AA AAITII Day		
	(University of			(University of the	(University of the		(Tshwane University of	Mr MITHI, Dumiso		
17.20 10.00	Johannesburg)			Witwatersrand)	Witwatersrand)		Technology)	(North-West University)		
17:30 - 18:00										
18:00 – 19:00				Free Show at the Wits Anglo Ar	merican Digital Dome (WAADD)					

Wednesday 09 July 2025

				PLENARY - [565] Indication	s for new physics at the LHC			
08:30 - 09:15					NEMEYER, SVEN			
(Venue: SHB5)				(Universidad Autono	ma de Madrid, Spain)			
09:15 - 09:20				Brea	ather			
TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS	NUCLEAR, PARTICLE AND RADIATION PHYSICS 1	NUCLEAR, PARTICLE AND RADIATION PHYSICS 2	PHOTONICS	ASTROPHYSICS & SPACE SCIENCE	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH	APPLIED PHYSICS	THEORETICAL AND COMPUTATIONAL PHYSICS
	(Venue: SHB5)	(Venue: SHB1)	(Venue: P114)	(Venue: SHB3)	(Venue: SHB4)	(Venue: SH6)	(Venue: SHB2)	(Venue: RS38)
	Dr LISEMA, Lehlohonolo	Dr NEVELING, Retief	Dr MAZINI, Rachid	Dr KAH, Glory	Dr KOLWA, Sthabile	Dr PHAGE, Itumeleng	Dr ERASMUS, Lucas	Prof HOROWITZ, William
Conveners	(University of the	(iThemba LABS)	(University of the	(University of	(University of South Africa)	(Central University of	(University of the Free	(University of Cape Town)
	Witwatersrand)		Witwatersrand)	Johannesburg)		Technology	State)	
09:20 -09:40	[105] Analysis of proton irradiation effects on fluorine-doped tin oxide thin films for optoelectronic applications in the LEO environment	[36] Systematics study of ground-state bands in rotating even-even nuclei to reveal triaxial deformation at ground state [For Award: MSc]	[139] Triboson Excesses in light of a Real Higgs Triplet Model	[45] Photonic-biosensing towards drug-resistant Tuberculosis diagnosis [For Award: PhD]	[7] Exploring the correlations between galaxy properties and environment in the large-scale structure of the Universe	[30] Assessment of Undergraduate Physics Students' Misconception about Heat and Temperature and Implications for Instruction	[529] Amplitude transformation in a qubit register	[149] Eigenvalue determination for a Toy and Woods-Saxon Potentials using unsupervised PINN
	Dr ORYEMA, Bosco (North-West University)	Mr XULU, Nkonzo (University of Zululand)	Dr BHATTACHARYA, Srimoy (University of the Witwatersrand)	Ms CHAUKE, Sipho (University of Cape Town)	Dr SURESHKUMAR, Unnikrishnan (University of the Witwatersrand)	Prof JONATHAN, Enock (National University of Lesotho)	Prof MATTHEWS, Alan (University of KwaZulu Natal)	Dr TSHIPI, Tshegofatso (Sol Plaatje University)
09:40 -10:00	[407] First-Principles Study of Zn-Site Transition Metal Doping in ZnSnO3 for Enhanced Performance in Dye-Sensitized Solar Cells (DSSCs) [For Award: PhD]	[242] Study of the K quantum number of pygmy states in 154Sm [For Award: MSc]	[258] Observation of 152 GeV charged scalar at future lepton colliders	[138] Laser-synthesized Selenium nanoparticles for SARS-CoV-2 detection using LSPR [For Award: PhD]	[328] Probing Gas Sloshing in the Core of Galaxy Cluster ZwCl 3146: Insights from Chandra and GMRT Observations	[135] Strengthening First- Year Physical Sciences Success: A Five-Year Analysis of Throughput with an Emphasis on Al-Driven Strategies	[437] Modulating properties of solid carbon nanospheres via ion implantation with hetero-ions	[65] Laplacian eigenmodes in twisted periodic topologies for new physics Models [For Award: PhD]
	Ms LETSOALO, Modjadji Rebecca (University of the Witwatersrand)	Ms MOLAENG, Refilwe Emil (University of the Witwatersrand)	Dr MAHARATHY, Siddharth Prasad (University of the Witwatersrand)	Ms MCOTSHANA, Zenande (University of Cape Town)	Dr SONKAMBLE, Satish (North-West University)	Dr KHUNOANA, Sewela (University of Johannesburg)	Prof DERRY, Trevor (University of the Witwatersrand)	Mr NCUBE, Anele (University of Johannesburg)
10:00 – 10:20	[498] Development of cellulose nanocrystal sheet embedded with carbon nanotubes for sensor application [For Award: PhD]		[351] Measuring the anomalous ttZ and tty couplings at Future e-p Colliders	[206] Dual Fabry-Perot Interferometric Fiber Sensors for Refractive Index Monitoring of Salt and Sugar Solutions Using Broadband Spectral Analysis [For Award: MSc]	[479] The ACT Data Release 6 Sunyaev-Zel'dovich Selected Cluster Catalogue	[72] Practical teaching methods for enhanced interest in teaching and learning Physics for undergraduate university students	[116] Listening with Light [For Award: MSc]	[468] Reservoir Computing for Predicting Chaotic Dynamical Systems [For Award: MSc]
	Mr DIANTANTU, AIME Diakanwa (University of the Witwatersrand)		Dr KUMAR, Mukesh (University of the Witwatersrand)	Mr BANGANI, Sandisiwe (Nelson Mandela University)	Prof HILTON, Matt (University of the Witwatersrand)	Prof SONDEZI, Buyisiwe (University of Johannesburg)	Mr BRENNER, Max (University of the Witwatersrand)	Mr JOOMA ABBAJEE, Taheer (University of Johannesburg)
10:20 -10:50			Morning Tea / Coffee B	reak (Solomon Mahlangu Hous	e Basement Level West Wing D	rawing Hall - SHWWDH)		

TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS	NUCLEAR, PARTICLE AND RADIATION PHYSICS 1	NUCLEAR, PARTICLE AND RADIATION PHYSICS 2	PHOTONICS	ASTROPHYSICS & SPACE SCIENCE	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH	APPLIED PHYSICS	THEORETICAL AND COMPUTATIONAL PHYSICS
Conveners	(Venue: SHB5) Prof MHLONGO, Motlalepula Rebecca (Sefako Makgatho Health Sciences University)	(Venue: SHB1) Prof NEVELING, Retief (iThemba LABS)	(Venue: P114) Prof MELLADO, Bruce (University of the Witwatersrand)	(Venue: SHB3) Prof KRÜGER, Tjaart (University of Pretoria)	(Venue: SHB4) Dr STEYN, Ruhann (North-West University)	(Venue: SH6) Prof SONDEZI, Buyi (University of Johannesburg)	(Venue: SHB2) Prof DERRY, Trevor (University of the Witwatersrand)	(Venue: RS38) Prof MURONGA, Azwinndini (Nelson Mandela University)
10:50 - 11:10	ST LECTURE: in 2D flatland Biplab :y, Sweden)	[90] X-ray production cross section measurements for the analysis of metal halide perovskite thin films using heavy ion PIXE spectroscopy [For Award: MSc]	[369] Searches for scalar resonances with di-photon in association with taus using the easyjet analysis framework in ATLAS detector at the LHC [For Award: MSc]	[131] Group delay dispersion measurements using the i2PIE pulse characterization technique [For Award: PhD]	[68] Modelling Earth's magnetic field over the South Atlantic Anomaly region using Swarm satellite and ground-based data [For Award: MSc]	[341] Quantum computing education availability in South Africa	[246] IoT-Based Environmental Monitoring in a Sawtooth Greenhouse: Foundations for CFD, Anomaly Detection, and Environmental Prediction [For Award: MSc]	[359] Discriminating multiprong jet substructure [For Award: PhD]
	l ≥ ∈ B ≥	Ms MOREMI, Lilian (Tshwane University of Technology)	Mr MAKGETHA, Kutlwano (University of the Witwatersrand)	Mr FOUCHE, Eugene (Stellenbosch University)	Mr KHANYILE, Sanele Lionel (SA National Space Agency and Rhodes University)	Ms FEATHERSTONE, Coral (Council for Scientific and Industrial Research)	Mr CASSIM, Abdool Sattar (University of Johannesburg)	Ms VAN DER SCHYF, Hannah (University of the Witwatersrand)
11:10 – 11:30	[60] NON-SPECIALIST Quantum materials in 2 Prof SANYAL, Big (Uppsala University, 3)	[55] Statistical Discrimination of Uranium Ore Concentrate Using Trace Element Signatures: Developing nuclear forensic fingerprints [For Award: PhD]	[373] Monte Carlo generation involving searches for scalar resonances with diphoton in association with tau+ tau-/2 b-jets in ATLAS detector at the LHC [For Award: MSc]	[231] Voltage-Based Wavelength Tuning of a DFB Laser Using an Enhanced LM331 Frequency-to Voltage Converter for OPLL Applications [For Award: PhD]	[122] Statistical Interpretation of the Thermospheric Density Responding to Geomagnetic Disturbances [For Award: MSc]	[441] Implications of Separate Marks for Physics and Chemistry in Matric Results	[259] Simulation and Image Reconstruction for a Low- Cost PET Detector Concept [For Award: MSc]	[374] Probing the Dead Cone using the Lund Jet Plane [For Award: MSc]
		Ms NTSOHI, Liteboho (University of the Witwatersrand)	Mr MBUYISWA, Njokweni (University of the Witwatersrand)	Ms MUTIA, Lilian (Nelson Mandela University)	Ms MSOMI, Sthandiwe (University of KwaZulu Natal)	Dr NEKHUBVI, VHUTSHILO (University of Venda)	Ms BAGG, Jemma (University of Cape Town)	Ms MATLHAKOLA, Ofentse (University of the Witwatersrand)
11:30 - 11:50	[326] High-resolution X-ray diffraction and Photoluminescence study of GaAsN epilayers [For Award: PhD]	[452] Understanding the structure of 16C and the B(E2) problem through Large-Scale Shell-Model (LSSM) calculations	[460] Searches for a scalar resonance with Di-photon in association with leptons in the range 130 – 200 GeV in the ATLAS detector at the LHC [For Award: MSc]	[192] Ag-H2O nanofluids by pulsed laser liquid-solid interaction for heat removal in electronics devices [For Award: MSc]	[283] Modelling and observation results for the 23-25 March 2023 geomagnetic storm	[497] An Approach to Using Arduino in University Practicals [For Award: MSc]	[262] Design considerations for a low-cost PET brain scanner [For Award: MSc]	[353] HBA-XGBoost: Honey Badger Algorithm with XGBoost Model for Residual Demand Forecasting [For Award: MSc]
	Ms PUJIRANA, ANDI ISNI (Nelson Mandela University)	Ms NTSOHI, Liteboho (University of the Witwatersrand)	Mr KAKANCU, Vuyolwethu Happyboy (University of the Witwatersrand)	Mr DLAMINI, Snenkosi (University of Zululand)	Dr KATAMZI-JOSEPH, Zama (South African National Space Agency	Ms HAGEMANN, Elizabeth (Nelson Mandela University)	Mr CARTHEW, Simon (University of Cape Town)	Mr NEMAKONDE, Pfano (University of Venda)
11:50 - 12:10	[350] Investigating the properties of Li9Al3(PO4)2(P2O7)3 solid electrolyte material for lithium-ion batteries: A computational study [For Award: PhD]		[401] Event Selection and Analysis Strategy for Diphoton Resonance Searches Accompanied by Leptonic Final States in 2022-2024 ATLAS Run 3 data [For Award: MSc]	[234] Synthesis and characterization of Cerium III ion doped zinc selenide thin films prepared by chemical bath technique for luminescence application	[550] The impact of geomagnetic storms and solar proton events in May and October 2024 on South Africa's upper atmosphere, compared to the historical event of October 2003	[358] Exploring Curriculum Considerations to Prepare Future Radiographers for an Al-Assisted Health Care Environment: Protocol for Scoping Review [For Award: PhD]	[307] Gone with the Windor Not? Tracking Light's Twists [For Award: MSc]	[197] Numeric exploration of Non-trivial emergent phenomena in Quark-Gluon Plasma [For Award: MSc]
	Mr MASHAOLE STUART, Mamabolo (University of Limpopo) [352] From Composition to		Mr NTUMBE, Kgothatso (University of the Witwatersrand) [409] A Search for a Scalar	Dr HILE, Donald Dehiin (University of Zululand) [306] Optical Quadrature	Dr OMOJOLA, Joseph (North-West University) [546] Characteristics of	Ms KAMMIES, Chamandra (University of Johannesburg)	Mr COCOTOS, Vasili (University of the Witwatersrand) [313] Warping light into	Ms O'CALLAGHAN, Nia (University of Cape Town) [228] Parameterizing the
12:10 – 12:30	Crystal: Predicting Sodium- Ion Battery Material		Resonance using Di-Photons in Association with a lepton	Microscopy with a polarization- sensitive camera	Nighttime Medium-scale Traveling Ionospheric Disturbances: Longitudinal		Neural Networks [For Award: MSc]	Geometry of the QGP on an Event-by-Event Basis

	Symmetries Using Physics-	and a b-jet with the ATLAS		Comparison of their						
	Guided Machine Learning	Detector		Seasonal and Local Time						
	[For Award: PhD]			Variations						
	Ms MONARENG, Keletso (University of Limpopo)	Mr NDHLOVU, Baballo Victor (University of the Witwatersrand)	Mr GROENEWALD, Calvin (Stellenbosch University)	Dr KATAMZI-JOSEPH, Zama (South African National Space Agency		Mr BEZUIDENHOUT, Hadrian (University of the Witwatersrand)	Mr FARADAY, Coleridge (University of Cape Town)			
12:30 – 12:35			Brea	ther						
12:35 – 13:45	Lunch (Main Dining Hall - Matrix Student Centre)									
13:45 -13:50	Breather									

	PLENARY - [570] Practitioners' understanding of integrating basic science into lessons										
13:50 – 14:35				e early childhood development play							
(Venue: SHB5)			Pro	ofessor MULOVHEDZI, Shonisani Agi	nes						
				(University of Venda)							
14:35 – 14:40				Breather							
	PHYSICS OF CONDENSED	NUCLEAR, PARTICLE AND	NUCLEAR, PARTICLE AND	PHOTONICS	ASTROPHYSICS & SPACE SCIENCE	PHYSICS FOR DEVELOPMENT,	APPLIED PHYSICS				
TRACK	MATTER AND MATERIALS	RADIATION PHYSICS 1	RADIATION PHYSICS 2			EDUCATION AND OUTREACH					
	(Venue: SHB5)	(Venue: SHB1)	(Venue: P114)	(Venue: SHB3)	(Venue: SHB4)	(Venue: SH6)	(Venue: SHB2)				
	Prof MKHONTO, Peace	Dr MDLETSHE, Linda	Dr KUMAR, Mukesh	Dr COX, Mitchell	Prof VENTER, Christo	Prof MALUTA, Eric	Prof FERRER, Philippe				
Conveners	(University of Limpopo)	(University of Zululand)	(University of the	(University of the	(North-West University)	(University of the Venda)	(University of the				
			Witwatersrand)	Witwatersrand)			Witwatersrand)				
	[360] Redox properties of	[291] Lead isotropic ratios as a	[453] Strategy for Particle	[110] In Vitro effects of Blue	[285] Neutrino Emission from	[560] PLAY and Brain Awareness	[482] Automated photovoltaic				
	VCo2O4 (001) surface in zinc air	nuclear forensic signature for age	Physics: Opportunities for South	Laser Light as an Antimicrobial	Bright Blazar Flares	– The missing link in STEM	module imaging for high				
	batteries	dating of uranium ores	Africa	Agent on Microbial-Infected	[For Award: PhD]	education	throughput data capture and				
14:40 – 15:00	[For Award: PhD]			Fibroblast Cells			analysis				
				[For Award: PhD]			[For Award: MSc]				
			Prof MELLADO, Bruce								
	Mr NGOBENI, Percy	Prof MATHUTHU, Manny	(University of the	Mr OBENG BRENYA	Mr ROBINSON, Joshua	Dr ERASMUS, Petro	Mr SIVEWRIGHT, Matthew				
	(University of Limpopo)	(North-West University)	Witwatersrand)	(University of Johannesburg)	(North-West University)	(North-West University)	(Nelson Mandela University)				
	[389] The effects of annealing	[278] Indirect experimental	[475] Detector Research and	[117] Optimizing	[217] Astrophysical origin of the		[59] What are the most suitable				
	temperature on physical	technique for constraining the	Development projects for future	Photobiomodulation Parameters	highest-energy neutrino event	<u> </u>	basic solar irradiance models for				
	properties of Ce2Zr2O7 materials	193,194lr(n,γ) cross sections	High Energy Physics experiments	for Tenogenic Differentiation		or ato	Southern Africa?				
15:00 - 15:20	[For Award: PhD]	[For Award: PhD]		[For Award: PhD]		ati	[For Award: MSc]				
		Ms MAGAGULA, Sebenzile	Dr MAZINI, Rachid			la g					
	Mr YISSAH, Saheed Omotosho	(University of the	(University of the	Mr ROETS, Brendon	Prof RAZZAQUE, Soebur	Ace lak	Ms FIGLAN, Sindiswa				
	(University of Johannesburg)	Witwatersrand)	Witwatersrand)	(University of Johannesburg)	(University of Johannesburg)	ills Accelerato Collaboration ting	(University of Johannesburg)				
	[398] Spectroscopic studies on	[140] Portable African Neutron-	witwatersrandy	[301] Synergistic Effect of	[161] Probing Dark Matter	Skills Accelerator & Collaboration leeting	[130] Physics-based modelling				
	InGa(1–x)N and InGa(1–x)N:Si	Gamma Laboratory for		Photobiomodulation and Vanillin	Signatures in IceCube	Me S	and simulation of lithium-ion				
	[For Award: PhD]	Innovative Nuclear Science		on Energy Metabolism in Diabetic	Astrophysical Neutrino	ווי בווי	battery capacity fade and				
	[101 Award 1115]	innovative reacted Science		Wounded Cells In Vitro	Data	ran	degradation				
15:20 – 15:40				Trounded cens in third	Jaca	ECD Science Programme M	[For Award: MSc]				
	Ms MPATANI, Ongeziwe										
	(University of the	Dr JONES, Pete		Dr ERUKAINURE, Ochuko	Dr DIXIT, Khushboo	_	Ms SANA, Patel				
	Witwatersrand)	(iThemba LABS)		(University of Johannesburg)	(University of Johannesburg)		(University of Venda)				
15:40 – 16:10			Stornoon Too / Coffee Break /Salam		West Wing Drawing Hall - SHWWD	ш\					
15:40 - 16:10		Al	ternoon rea / Corree Break (Solomo	on Maniangu House Basement Leve	west wing brawing Haii - SHWWD	п)					
16:10 – 18:00	Poster Session 1 (Solomon Mahlangu House Basement Level West Wing Drawing Hall - SHWWDH)										
18:00 – 19:00	Free Show at the Wits Anglo American Digital Dome (WAADD)										
18:00 – 19:00			Council Meeting with Heads of S	Schools and Departments of Physics	(First Floor Gate House GH102A)						

Thursday 10 July 2025

08:30 - 09:15	PLENARY - [566] Wearable adaptive optics for the eye Professor ARTAL, PABLO										
(Venue: SHB5)					RTAL, PABLO rcia, Murcia, Spain)						
09:15 - 09:20					ther						
TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS	NUCLEAR, PARTICLE AND RADIATION PHYSICS 1	NUCLEAR, PARTICLE AND RADIATION PHYSICS 2	PHOTONICS	ASTROPHYSICS & SPACE SCIENCE	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH	APPLIED PHYSICS	THEORETICAL AND COMPUTATIONAL PHYSICS			
	(Venue: SHB5)	(Venue: SHB1)	(Venue: P114)	(Venue: SHB3)	(Venue: SHB4)	(Venue: SH6)	(Venue: SHB2)	(Venue: RS38)			
Conveners	Dr YAGOUB, Mubarak (University of Johannesburg)	Dr MAJOLA, Siyabonga (University of Johannesburg)	Dr KUMAR, Mukesh (University of the Witwatersrand)	Dr OMBINDA-LEMBOUMBA, Saturnin (Council for Scientific and Industrial Research)	Dr KATAMZI-JOSEPH, Zama (South African National Space Agency)	Prof ERASMUS, Rudolph (University of the Witwatersrand)	Dr THANTSHA, Nicolas (Tshwane University of Technology)	Dr VAN LEUVEN, Sam (University of the Witwatersrand)			
09:20 - 09:40	[459] Tuning interlayer exciton emission in binary-ternary heterobilayers based on Mo(0.5}W(0.5)Se2	[432] Study of low-medium spin states in 156Er [For Award: MSc]	[368] Measurement of the top quark Yukawa coupling from tt kinematic distributions in the dilepton final state [For Award: PhD]	[493] Light-harvesting protein aggregation studied by real-time feedback-driven single-particle tracking spectroscopy	[436] Investigating the latitudinal-dependent solar differential rotation rate using SDO/HMI Dopplergrams [For Award: Honours]		[31] Design and Experimental Evaluation of an Archimedes Screw Hydro Turbine (ASHT) for Rural Sustainable Energy Application	[51] Adiabatic elimination approach to the completely positive master equation for open quantum Brownian motion			
	Dr MASENDA, Hilary (University of the Witwatersrand)	Ms KHANYEZA, N.N (University of Pretoria)	Mr GARVEY, Cameron (University of Cape Town)	Dr VAN HEERDEN, Bertus (University of Pretoria)	Mr ZULU, Thembalethu (North-West University)	\	Prof JONATHAN, Enock National University of Lesotho)	Mr ZUNGU, Ayanda (North-West University)			
09:40 -10:00	[505] Effect of substrate geometry on microstructure and biological response of air plasma-sprayed hydroxyapatite coatings	[516] Exciting the Hoyle state in 12C selectively populated using the 10B(6Li,4He)12C reaction	[342] A search for tWZ production in the ATLAS experiment Run 2 dataset [For Award: MSc]	[501] Temperature- dependent single-molecule spectroscopy of plant protein aggregates	[103] Modelling the antiproton modulation related to AMS-02 observations between 2011 and 2021 [For Award: PhD]	PHYSICS IN INDUSTRY DAY	[33] Proactive Equipment Monitoring Using Vanilla LSTM for Predictive Maintenance at iThemba LABS	[193] Advancing Thermal Field Theory: NLO Calculations for Finite Size Systems [For Award: MSc]			
	Dr NTSOANE, Tshepo (The South African Nuclear Energy Corporation)	Prof CARTER, John (University of the Witwatersrand)	Mr SANGWENI, Thobani (University of Cape Town)	Prof KRÜGER, Tjaart (University of Pretoria)	Mr MAHLATJI, THABO (North-West University)	PHYSICS	Dr NKADIMENG, Edward (iThemba LABS)	Mr ROOSENSTEIN, Rens (University of Cape Town)			
10:00 – 10:20		[385] The photon strength functions from (p, γ) capture reactions. [For Award: PhD] Mr NETSHIYA, Adivhaho	[284] Exploring toponium formation at the LHC [For Award: MSc]	[168] Increased exciton annihilation in incrementally aggregated photosynthetic antenna complexes from plants [For Award: PhD]	[114] Simulating cosmic ray diffusion coefficients in synthetic compressive magnetic turbulence [For Award: PhD] Mr TROSKIE, Jonathan		[76] Power Law model (PLM) approaches to predict the performance of a small-scale PV system Dr KAPIM KENFACK, Abraham Dimitri	[370] Superconformal indices in closed form [For Award: MSc] Ms MATHIESON, Kayleigh			
		(University of the Witwatersrand)	Mr HOSSAIN, Aminul (University of Cape Town)	Mr CONRADIE, Francois (University of Pretoria)	Stephanus (North-West University)		(Tshwane University of Technology)	(University of the Witwatersrand)			
10:20 -10:50			Morning Tea / Coffee E	Break (Solomon Mahlangu Hous	e Basement Level West Wing D	rawing Hall - SHWWDH)					

	PHYSICS OF CONDENSED	NUCLEAR, PARTICLE AND	NUCLEAR, PARTICLE AND	PHOTONICS	ASTROPHYSICS & SPACE	PHYSICS FOR	APPLIED PHYSICS	THEORETICAL AND		
	MATTER AND MATERIALS	RADIATION PHYSICS 1	RADIATION PHYSICS 2	1	SCIENCE	DEVELOPMENT, EDUCATION		COMPUTATIONAL PHYSICS		
TRACK						AND OUTREACH				
	(Venue: SHB5)	(Venue: SHB1)	(Venue: P114)	(Venue: SHB3)	(Venue: SHB4)	(Venue: SH6)	(Venue: SHB2)	(Venue: RS38)		
	Prof WAMWANGI, Daniel	Prof MATHUTHU, Manny	Dr GOLOLO, Mpho	Prof FORBES, Andrew	Prof CHEN, Andrew	Prof ERASMUS, Rudolph	Dr MARIOLA, Marco	Prof HOROWITZ, William		
Conveners	(University of the	(North-West University)	(University of	(University of the	(University of the	(University of the	(University of Kwazulu-	(University of Cape Town)		
	Witwatersrand)		Johannesburg)	Witwatersrand)	Witwatersrand)	Witwatersrand)	Natal)			
	[150] Cage motion of Iron (Fe)	[126] Investigating the photon	[236] Dark photons search with	[80] Evaluation of the	[63] Probing the pi-axiverse	·	[354] Measurement of	[434] Advancing Dark-QCD		
	in Silicon (Si)	strength function for 61Cu using	the ATLAS detector at the LHC	Phototoxic effect of Chemically	with astrophysics	_	fundamental ion-atom	searches: Model Development,		
		60Ni (p, γ) at iThemba LABS		Synthesized Silver Nanoparticles		≧ ≧	interaction parameters for	Constraints, and Novel Anomaly		
		[For Award: PhD]		on Breast Cancer Cells		CS RY	heavy ion beam materials	Detection Technique		
10:50 – 11:10				[For Award: MSc]		l ST ST	analysis			
	Dr LISEMA, Lehlohonolo	Mr MODISE, Tshegofatso	Dr MAZINI, Rachid		Dr BECK, Geoff	PHYSICS IN	Prof MSIMANGA, Mandla			
	(University of the	Goitseone	(University of the	Mr BAIDOO, Isaac	(University of the	"	(Tshwane University of	Prof KAR, Deepak		
	Witwatersrand)	(iThemba LABS)	Witwatersrand)	(University of Johannesburg)	Witwatersrand)	_	Technology)	(University of Witwatersrand)		
	[124] Seebeck and SBS studies	[159] The PANDORA Project:	[347] Search for a new spin-0	[142] The Photo-Thermal Effect	[277] In Search of Dark Matter		[218] Nanocrystal Enhancement	[201] Spin chains for N=2 quiver		
	on buried amorphous carbon	Investigating Photonuclear	scalar and a spin-1 boson using	of Green-Synthesized Gold	with MeerKAT Radio Telescope		of Low-Cost Scintillators for PET	theories		
	channels in Diamond	Reactions in Light Nuclei	Run2 ATLAS detector data	Nanoparticles on Human Breast	in Dwarf Spheroidal Galaxies		Imaging Application	[For Award: MSc]		
11:10 - 11:30	Prof NAIDOO, Shunmugam		[For Award: PhD]	Cancer Cells						
	Ramsamy	Dr BEKKER, Jacob		[For Award: MSc]	Ms SEMANE, Shibre					
	(University of the	(University of the	Mr MAPEKULA, Xola	Ms MOHLONGO, Mpho	(University of the		Mr MAHONY. Declan	Mr BATH, Jarryd		
	Witwatersrand)	Witwatersrand)	(University of Johannesburg)	(University of Johannesburg)	Witwatersrand)		(University of Cape Town)	(University of Pretoria)		
	[143] Effect of annealing	[488] Simulation of the X-ray	[102] The W boson as a probe	[16] Nanoformulation of	[152] Exploring the properties	1	[364] Preliminary Investigation	[302] Computing the SU(N) Shur		
	conditions on the photocatalytic	and gamma-radiation shielding	for the initial state of hadron	Pheophorbide-a for	of pulsars and their nebulae		of the Mechanical Properties of	index for N=4 super Yang-Mills		
	activity of anodic TiO2	parameters of the	collisions at the LHC	Photodynamic Therapy in a	through observations and		Tissue Biopsies	[For Award: MSc]		
		Li2O+Sb2O3+PbO+GeO2 glass	[For Award: MSc]	Human Lung Cancer Spheroid	modelling					
11:30 – 11:50		materials in the 20 - 300 keV energy range using Phy-X/PSD,		Model [For Award: PhD]	[For Award: MSc]					
11:50 - 11:50		XCOM, and Geant4 software		[FOI AWAIG. PIID]		<u> </u>				
		programs								
		programme				PHYSICS IN INDUSTRY DAY				
	Dr TALLA, Assane	Dr MDLETSHE, Linda	Mr POTGIETER, Stephan	Mr MOLOUDI, Kave	Mr NYAMBE, Trevor) nc	Dr DADA, Kayode	Mr BATH, Jarryd (University of		
	(Nelson Mandela University)	(University of Zululand)	(University of Cape Town)	(University of Johannesburg)	(North-West University)	<u> </u>	(University of Johannesburg)	Pretoria)		
		[187] Coupling the MAGNEX		[164] The efficacy of PAM	[98] Characterisation and	Z	[426] Advancing solar energy			
		focal-plane detector to the		fluorometry as a tool to	Calibration of the Kepler KL4040	S	research with perovskite			
		K600 high-resolution magnetic spectrometer for the NUMEN		quantify heat stress in Wheat [For Award: MSc]	sCMOS camera for Optical Observations at the	l Sic	materials			
11:50 - 12:10		project		[101 Award. Wise]	UFS/Boyden Observatory					
12.00		p. sjeet				_				
					Dr VAN HEERDEN, Hendrik					
		Dr KHUMALO, Thuthukile		Ms BURNETT, Sarah	Jacobus		Prof DIALE, Mmantsae			
		(iThemba LABS)		(University of Pretoria)	(University of the Free State)	-	(University of Pretoria)			
		[216] Investigating the photon		[349] Using a synthesised	[458] Wits Astronomical Plate		[113] An empirical method to			
		shielding factors of the silicate glass system from 1 MeV up to		wavelength to non-locally probe the depth of Objects	Archive – preservation of a century of Southern		negate Bragg-peak shifts due to partial gauge volume			
		15 MeV, Using the X-COM and		[For Award: PhD]	Hemisphere astronomy at the		illumination in neutron powder			
12:10 -12:30		GEANT4 simulating software		[10.1	Johannesburg Observatory		diffraction studies			
		_								
				Mr GOUNDEN, Neelan	Prof CARTER, John		Dr MARAIS, Deon			
		Mr ZUMA, Mfundo		(University of the	(University of the		(The South African Nuclear			
		(University of Zululand)	<u> </u>	Witwatersrand)	Witwatersrand)		Energy Corporation)			
12:30 – 12:35	Conference Group Photograph, Front of Great Hall									
12:35 – 13:45				Lunch (Main Dining Hall	- Matrix Student Centre)					
13:45 – 13:50				Brea	ather					
13:45 – 13:50	Breather Breather									

TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS (Venue: SHB5)	NUCLEAR, PARTICLE AND RADIATION PHYSICS (Venue: SHB1)	PHOTONICS (Venue: SHB3)	ASTROPHYSICS & SPACE SCIENCE (Venue: SHB4)	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH (Venue: SH6)	APPLIED PHYSICS (Venue: SHB2)	THEORETICAL AND COMPUTATIONAL PHYSICS (Venue: RS38)		
Conveners	Prof TERBLANS, J.J (University of the Free State)	Prof NTSHANGASE, Sifiso (University of Zululand) & Dr KUMAR, Mukesh (University of the Witwatersrand)	Dr DUDLEY, Angela (University of the Witwatersrand)	Dr BECK, Geoff (University of the Witwatersrand)	Prof JONATHAN, Enock (National University of Lesotho)	Prof MATTHEWS, Alan (University of Kwazulu-Natal)	Prof HOROWITZ, William (University of Cape Town)		
13:50 – 14:10	ENSED MATTER AND MATERIALS: pivision Meeting	AND MATERIALS:	[22] Photothermal Therapy Using Green-Synthesized gold Nanoparticles Derived from Senna didymobotrya: A Novel Strategy for Targeted Treatment of Melanoma Cells [For Award: PhD] Ms ZAHRA, Mehak (Laser Research Centre)	[156] Solar wind temperature anisotropy during the Ulysses Spacecraft first polar pass Dr DESTA, Ephrem Tesfaye (North-West University)	[425] African collaborations and related benefits Prof MOCHE DIALE, Mmantsae (University of Pretoria)	[532] NON-SPECIALIST LECTURE: Characterising Photovoltaic Modules for Performance, Reliability, and Sustainability Prof VAN DYK, Ernest (Nelson Mandela University)	THEORETICAL AND COMPUTATIONAL PHYSICS: Division Meeting		
14:10 – 14:30			[166] Riboflavin-mediated Photodynamic Therapy Induces Cytotoxic Effects in A549 Lung Cancer Cells [For Award: PhD] Mrs SEELETSE, Malefo Tshepiso	[269] Cosmic-Ray Neutron Detectors for Soil Moisture Monitoring Ms DUMONT, Aimee	[563] The role of physics in climate science and sustainability science with special emphasis on Southern Africa Prof GLEDHILL, Irvy (Igle) (University of the				
14:30 – 14:50	S OF CON		(University of Johannesburg) [261] Turmeric silver nanoparticles in melanoma photodynamic therapy [For Award: PhD] Mrs KAH, Glory (University of Johannesburg)	(North-West University) [503] Investigating the photospheric and chromospheric response of a C-class solar flare on 1 July 2012 using Swedish Solar Telescope and SDO observations Dr STEYN, Ruhann (North-West University)	Witwatersrand) [464] Electrical Transport Measurements from First Principles: a Senior Undergraduate Experiment Prof KEARTLAND, Jonathan (University of the Witwatersrand)	APPLIED PHYSICS: Division Meeting			
14:50 – 15:10			[61] Enhancing the Efficacy of Photodynamic Therapy: The Role of Hypocrellin B, Quercetin, and their combinations in Human Breast Cancer Cell Line Dr RAJAN, Sheeja S (University of Johannesburg)	SPACE SCIENCE:	ELOPMENT, OUTREACH: eeting				
15:10 – 15:30			[387] Evaluation of Ce6 Photosensitisers-Induced Dark Toxicity and Phototoxicity (660 nm) on Melanoma Cells [For Award: MSc] Ms OBALOLA, Aishat (University of Johannesburg)	ASTROPHYSICS & Division	PHYSICS FOR DEV EDUCATION AND Division M				
15:30 – 16:10		Afternoon Tea / Coffee Break (Solomon Mahlangu House Basement Level West Wing Drawing Hall - SHWWDH)							
16:10 – 18:00		Poster Session 2 (Solomon Mahlangu House Basement Level West Wing Drawing Hall - SHWWDH)							
18:00 – 19:00		Council Meeting with Division Chairs (First Floor Gate House GH102A)							
18:00 – 19:00		Free Show at the Wits Anglo American Digital Dome (WAADD) / Physics Quiz Cup (Venue: SHB5)							

Friday 11 July 2025

08:30 - 09:15 (Venue: SHB5)	PLENARY - [567] Gamma-ray Pulsars: Puzzles and Progress Professor VENTER, Christo (North-West University)								
09:15 - 09:20	Breather								
TRACK	PHYSICS OF CONDENSED MATTER AND MATERIALS (Venue: SHB5) Prof KROON, R.E. (University of the Free State)	NUCLEAR, PARTICLE AND RADIATION PHYSICS (Venue: SHB1) Dr KHUMALO, Thuthukile (iThemba LABS)	PHOTONICS (Venue: SHB3) Dr NAPE, Isaac (University of the Witwatersrand)	ASTROPHYSICS & SPACE SCIENCE 1 (Venue: SHB4) Dr MHLAHLO, Nceba (University of the Witwatersrand)	ASTROPHYSICS & SPACE SCIENCE 2 (Venue: RS38) Dr OMOJOLA, Joseph (North-West University)	PHYSICS FOR DEVELOPMENT, EDUCATION AND OUTREACH (Venue: SH6) Prof MURONGA, Azwinndini (Nelson Mandela University)	(Venue: SHB2) Prof KRÜGER, Tjaart (University of Pretoria)		
09:20 - 09:40	[220] Unconventional transport behaviour in some ultra pure systems	[311] Electromagnetic Properties of the 106Cd Nucleus and Experimental Validation of the Generalized Brink-Axel Hypothesis (gBA) [For Award: PhD]	[64] Evaluation of Pheophorbide a Phototoxicity in Melanoma Cells Grown as Three- Dimensional Multicellular Tumour Spheroids	[519] Trends of Thermal Structure in the MLT Region Using SABER Observations Over Sutherland, South Africa [For Award: MSc]	[553] Cosmic-Ray Neutron Detectors for Soil Moisture Monitoring		[428] Ptychography in Ti64 alloy at the Diamond Light Source		
	Dr PANDEY, Abhishek (University of the Witwatersrand)	Ms TSEWU, Ayabulela (University of Johannesburg)	Dr NKUNE, Nkune (University of Johannesburg)	Mr NHLOZI, Blessing Mvana (University of Zululand)	Ms DUMONT, Aimee (North-West University)	MEETING	Dr JAKATA, Kudakwashe (Diamond Light Source)		
09:40 - 10:00	[319] The Effect of Chlorine on the Morphology and Crystal Structure of Tin-doped Mixed Halide Perovskites	[504] Theoretical studies of chiral systems described within particle-rotor Model	[96] In vitro evaluation of hypocrellin B based-photodynamic therapy on human oesophageal cancer HKESC-1 cells	[276] Nuggets at the heart of nearby galaxiesNGC2865	[552] Solar wind temperature anisotropy during the Ulysses Spacecraft first polar pass	SAPhysNet FORUM MEE	[471] Weather Forecasting Using Graph Neural Networks and Physics-informed Neural Networks		
	Dr MAGUBANE, Siphesihle (iThemba LABS)	Dr SHIRINDA, Obed (Sol Plaatje University)	Dr DIDAMSON, Onyisi Christiana (University of Johannesburg)	Dr ALABI, Adebusola (North-West University)	Dr DESTA, Ephrem Tesfaye (North-West University)		Dr MAFU, Mhlambululi (Case Western Reserve University)		
10:00 – 10:20	[329] Effect of Cr doping on the electronic, thermal and magnetic properties of SrCo2As2	[473] Systematics review of low- lying positive parity structures in the 160 mass region.		[190] Stochastic particle acceleration by multifractal MHD turbulence in strong magnetic fields [For Award: MSc]	[551] An investigative numerical modelling study of galactic deuterons in the heliosphere	AS	[495] Reconfigurable Payload Power Management System for Rockets		
	Dr MONDAL, Sampad (University of the Witwatersrand)	Dr MAJOLA, Siyabonga (University of Johannesburg)		Mr VAN DER MERWE, Frans (North-West University)	Ms RAMOKGABA, Innocentia Itumeleng (North-West University)		Dr MARIOLA, Marco (University of KwaZulu-Natal)		
10:20 – 10:50	Morning Tea / Coffee Break (Solomon Mahlangu House Basement Level West Wing Drawing Hall - SHWWDH)								

	PHYSICS OF CONDENSED	NUCLEAR, PARTICLE AND	PHOTONICS	ASTROPHYSICS & SPACE	ASTROPHYSICS & SPACE	PHYSICS FOR DEVELOPMENT,	APPLIED PHYSICS
TRACK	MATTER AND MATERIALS	RADIATION PHYSICS		SCIENCE 1	SCIENCE 2	EDUCATION AND OUTREACH	
	(Venue: SHB5)	(Venue: SHB1)	(Venue: SHB3)	(Venue: SHB4)	(Venue: RS38)	(Venue: SH6)	(Venue: SHB2)
	Dr VAN NIEKERK, Chani	Dr KHUMALO, Thuthukile	Dr NAPE, Isaac	Dr BECK, Geoff	Dr OMOJOLA, Joseph	Prof MURONGA, Azwinndini	Prof MATTHEWS, Alan
Conveners	(University of the	(iThemba LABS)	(University of the	(University of the	(North-West University)	(Nelson Mandela University)	(University of Kwazulu-Natal)
	Witwatersrand)		Witwatersrand)	Witwatersrand)			
	[348] Optical spectroscopic	[462] Probing Charged Current B-		[157] A Temporal-spectral study	[554] Investigating the	V	[414] Exciting applications for a
10:50 – 11:10	investigations of	anomalies via a U (1)μ-τ		of short gamma-ray transients:	photospheric and chromospheric	5	turn-key structured light
	antiferromagnetic	Extension of the Standard Model	[555] NON-SPECIALIST LECTURE:	Identifying distinct signatures of	response of a C-class solar flare	G BR	generator
	semiconducting BaMn2P2	[For Award: MSc]	Two-photon Infrared Vision	gamma-ray bursts and magnetar	on 1 July 2012 using Swedish	l Z	
				giant flares	Solar Telescope and SDO	ET ET	
		Mr KAKANCU, Vuyolwethu	Prof ARTAL, Pablo	[For Award: PhD]	observations	JS JE	
		Happyboy	(University of Murcia)			ر آ	
	Dr JACOBS, Susan	(University of the		Mr MAHESO, Dimakatso	Dr STEYN, Ruhann	ΑF	Dr JORDAAN, Bertus (University
	(University of Johannesburg)	Witwatersrand)		(North-West University)	(North-West University)	ν	of the Witwatersrand)

18:00 – 20:00	Conference Banquet (The Empire Conference and Events Venue, 16 Empire Rd, Parktown, Johannesburg)							
14:40 – 16:40	Annual General Meeting of the South African Institute of Physics (Venue: SHB5)							
14:35 – 14:40	Breather Control of the Control of t							
(Venue: SHB5)	(Stellenbosch University)							
13:50 – 14:35	PLENARY - [569] Shaping the Future: A Physics Journey to Groundbreaking Research in Quantum Technologies Dr ISMAIL, YASEERA							
13:45 – 13:50		Breather PLENARY JESON Charity the Entered A Physica Lawrence to Council the Paragraph in County Technologies						
12:35 - 13:45	Lunch (Main Dining Hall - Matrix Student Centre)							
12:30 - 12:35	Breather							
	Dr JAKATA, Kudakwashe (Diamond Light Source)	(University of the Western Cape)		Mr MFUPHI, Ntshatsha (University of Johannesburg)				
12:10 - 12:30	beamline	[For Award: PhD] Mr UNWUCHOLA, Doomnull						
	[429] Bragg Coherent Diffraction Imaging and Ptychography at the Diamond Light Source i13-1	[448] Orthogonality study for the A/Sv→vZdZdv→v2l2v/2l2j with the ATLAS detector at the LHC		[75] Compton-induced cascade gamma-rays in the radio galaxy NGC 1275				
11:50 – 12:10	[418] Accelerated Construction of Equations of States for Elemental and Binary Alloys via Physics-Informed Message Passing Neural Networks Mr NGCOBO, Thabani (Council for Scientific and Industrial Research)	[244] Comparison of Full and Fast Simulation Efficiencies in the ATLAS Detector Using Tag-and-Probe and EGamma MC Comparison Frameworks [For Award: MSc] Mr CASSIM, Abdool Sattar (University of Johannesburg)	PHOT	[43] Exploring ULXs as Short GRB Precursors Mr NYADZANI, Lutendo (University of Johannesburg)		SAPhysNet	(3	
11:30 – 11:50	[415] First-principles and experimental insights into the structural stability and thermoelectric properties of SnSb Ms BALOI, Mmapula (University of the Witwatersrand)	[372] The use of Machine Learning techniques to analyse the h-> Zy process within the SMEFT framework at the Large Hadron Collider (LHC) [For Award: MSc] Mr MAKGETHA, Kutlwano (University of the Witwatersrand)	PHOTONICS: Division Meeting	[273] Late-time spectropolarimetry of GRB 250129A: evidence of an off-axis Gaussian jet Dr GHOSH, Ankur (University of Johannesburg)		FORUM MEETING	Johannesburg) [474] GeoQAI: A Quantum Machine Learning Paradigm with Geospatial Data Dr SENEKANE, Makhamisa (University of Johannesburg)	
11:10 – 11:30	[356] Mechanical investigation of (Ti2NbPt)2 HTSMAs from binary phase Diagram Dr MASHAMAITE, Mordecai (University of Limpopo)	[377] Analysing h to Zy decay at the Large Hadron Collider using SMEFT [For Award: MSc] Mr MBUYISWA, Njokweni (University of the Witwatersrand)	[555] NON-SPECIALIST LECTURE: Two-photon Infrared Vision Prof ARTAL, Pablo (University of Murcia)	[128] Multi-Wavelength Observations of AGN Activity in the Fornax Cluster Dr WOLDEYES, Dejene Zewdie (North-West University)			[439] A Comparative Analysis of Radiation-Induced Wavelength Shift in Radiation-Soft and -Hard Fibre Bragg Gratings Exposed to Proton Irradiation Dr MAQABUKA, Bongani (University of	
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