

# Student Lecture Programme

Friday 12<sup>th</sup> August

Session 1 (15:00 - 16:30)

	Planetary Astrophysics (B1)	Philosophy of Science (B2)
15:00	Miss <b>Andreea Munteanu</b> : Massive Stellar Evolution and Neutrino Physics	Mr. <b>Daniel Czege</b> : What is understanding in science?
15:18	Mr. <b>Leonardo Espinoza Zepeda</b> : Journey to Mars	Mr. <b>Adrian Solymos</b> : Reference frame-free spacetime model
15:36	Mr. <b>Erik Johnson</b> : Reducing effect of RV scatter around active M Dwarfs	Ms. <b>Sabina Dafi</b> : A quick course on physics teaching
15:54	Mr. <b>Kunal Deoskar</b> : Active Galactic Nuclei - Are they responsible for the IceCube neutrino detections?	Dr. <b>David Jacome</b> : Outreach and Physics Education in the 2020
16:12	Miss <b>Gvantsa Ghutishvili</b> : Study of Instabilities in the Great Red Spot of Jupiter	Miss <b>Ildik Stark</b> : A new way to determine causality
16:30	Coffee break	

Saturday 13<sup>th</sup> August

Session 2 (9:30 - 11:00)

	Material Physics 1 (B1)	Astrophysics and Cosmology 1 (B2)
09:30	Mr. <b>Bogdan Butoi</b> : GLAD technique in plasma polymerisation - controlling morphological growth of polymers	Mr. <b>Alexandru Balaceanu</b> : The Development of Cosmic-Ray Detectors in Bucharest
09:48	Mr. <b>Pavao Andricevic</b> : A new old compound is the star in photovoltaics	Mr. <b>Jan Kwapisz</b> : Mass in de Sitter space
10:06	Mr. <b>Lamborghini Sotelo</b> : A little bit of photon pair generation in optical fibers	Ms. <b>Stina Scheer</b> : Optomechanics of photonic crystal membranes
10:24	Mr. <b>Jannis Dickmann</b> : Diffusion of Radon in Tissue	Mr. <b>Jnos Taktsy</b> : Testing globular cluster models with future detections of gravitational waves from eccentric binary black holes
10:42	Mr. <b>Fraser Pike</b> : Combining Multiple Mid-Infrared Laser Diodes into a "Superbeam"	Mr. <b>Alexandru Gherghel-Lascu</b> : The KASCADE-Grande and Pierre Auger Cosmic Ray Experiments
11:00	Coffee break	

**Session 3 (14:30 - 16:00)**

	<b>Material Physics 2 (B1)</b>	<b>Data Analysis, Simulation and Imaging 1 (B2)</b>
<b>14:30</b>	<b>Miss Danielle Harper:</b> What Makes a Flute a Flute? A Mathematical Analysis of Timbre	<b>Mr. Ulrich Haselmann:</b> FEBID
<b>14:48</b>	<b>Miss Joanna Symonowicz:</b> Light trapping in the Organic Solar Cells	<b>Mr. Diego Benusiglio:</b> Physics in Neuroscience - measuring and modelling of neural circuits.
<b>15:06</b>	<b>Mr. Krishna Seegoolam:</b> Engineering dielectric tunability at perovskite interfaces	<b>Mr. Kristf Rozgonyi:</b> Wide-field analysis of VLBI survey data
<b>15:24</b>	<b>Ms. Ganna Shchygol:</b> Modelling reactions with ReaxFF in MOFs with defects	<b>Miss Sofia Luisa Soares Ferreira Nunes Teixeira:</b> Numerical simulations of flexible thermoelectrics
<b>15:42</b>	<b>Mr. Lukas Deuchler:</b> DFT study of the diffusion of S adsorbates on a Br pre-covered Cu(100)-surface	<b>Mr. Simo Tuomisto:</b> Simulating a sun with your computer
<b>16:00</b>	Coffee break	

**Session 4 (16:30 - 17:30)**

	<b>Nuclear Physics (B1)</b>	<b>Geophysics (B2)</b>
<b>16:30</b>	<b>Miss Lilla Van:</b> Characterisation of density fluctuations during the inter-ELM periods in the MAST spherical tokamak	<b>Mr. Kamil Ciesielski:</b> Novel rock sampling technique for use on Mars
<b>16:48</b>	<b>Mr. Zvonimir Domazet:</b> Introduction to Nondestructive Testing in Nuclear Power Applications	<b>Ms. Mariam Abuladze:</b> Influence of one specific turbulence on the stable structure of tornadoes
<b>17:06</b>	<b>Mr. Thomas Potocar:</b> Nuclear reactor	<b>Miss Caracas Ioana-Alexandra:</b> Geo-neutrinos as messengers of the Earths interior and as radioactive background in new generation of neutrino oscillations experiments
<b>17:24</b>	Transport	

Sunday 14<sup>th</sup> August

Session 5 (9:30 - 11:00)

	Quantum Physics 1 (B1)	Electromagnetism (B2)
09:30	Mr. Miller Lukas: Categories in physics	Mr. Timo Eckstein: Accelerators on a Chip
09:48	Mr. Matthias Dahlmans: Particle creation in expanding universes	Mr. Vittorio Erba: Jack Polynomials and Quantum Hall Effects
10:06	Mr. Gerhard Dorn: Quantum dynamics	Mr. Giorgi Bakhtadze: Motion of charged particles in strong magnetic field of pulsar
10:24	Mr. Michal Dragowski: Quantum Spin Correlations	Miss Ida Friis: The Molecular Biocompass
10:42	Dr. Ross Donaldson: Fighting quantum with quantum.	Mr. Dewan Woods: Radio Frequency (RF) source for Optically Detected Magnetic Resonance
11:00	Coffee break	

Session 6 (11:30 - 13:00)

	Medical Physics (B1)	Material Physics 3 (B2)
11:30	Mr. Andrii Repula: Measuring the effect of local electric field in biomimetic self-assembled membranes	Mr. Anton Saressalo: Ferroelectric properties of BFBT thin films
11:48	Mr. Alexandru Nistorescu: Characterisation of Striated Muscular Tissue- Device development and testing method	Mr. James Kneller: Optically Induced Dielectric Changes in Organic Semiconductors and their Non-Adherence to Classical Plasma Theory
12:06	Mr. Luka Luketin: Neuromagnetic studies of the earliest effects of the spatial visual attention	Mr. Toni Markovi: Topological insulators - Synthesis and transport measurements
12:24	Mr. Lari Koponen: Transcranial magnetic stimulation (TMS) for in vivo brain research	Mr. Alexander Schiffmann: n-MOSFET Ageing Measurements and Modeling
12:42	Ms. Eva Hrabri: The role of cross-linking proteins and microtubule pivoting in formation of parallel bundles	Mr. Markus Karppinen : From London to Msida - A Decade of ICPS
13:00	Lunch	

Monday 15<sup>th</sup> August

Session 7 (9:30 - 11:00)

	Data Analysis, Simulation and Imaging 2 (B1)	Astrophysics and Cosmology 2 (B2)
09:30	<b>Mr. Piotr Kucharski:</b> Quantisation from the perspective of knot invariants	<b>Miss Karen Macas:</b> Sky's Law - light pollution
09:48	<b>Mr. Joonas Havukainen:</b> Neural networks and High Energy Physics	<b>Mr. Baptiste Ravina:</b> Cosmological axion - a Dark Matter candidate
10:06	<b>Miss Wiebke Hahn:</b> High resolution imaging of scanning tunnelling luminescence from InGaN/GaN QWs	<b>Mr. Maximilian Dill:</b> Gravity - It can be derived from matter!
10:24	<b>Gabriella Koncz:</b> Study of exotic nuclei with radioactive ion beams	<b>Mrs. Jacqueline Catalano:</b> A trigger ASIC for the Cherenkov Telescope Array
10:42	<b>Mr. Tamas Almos Vami:</b> Reconstruction of the CMS Pixel Pilot Blade	<b>Mr. Florian Wolz:</b> Gravitational dynamics beyond the standard model - a case study
11:00	Coffee break	

Session 8 (14:30 - 16:00)

	Quantum Physics 2 (B1)	Atomic and Particle Physics 1 (B2)
14:30	<b>Mr. Nicola Mosco:</b> A path-sum approach for Weyl and Dirac Quantum Walks	<b>Ms. Angela Ludvigsen:</b> Laser Power Effects on the Size of an Optically Trapped Aerosol Droplet Determined Via Whispering Gallery Modes
14:48	<b>Mr. Dniel Nmeth:</b> CDT - A Nonperturbative Quantum Gravity Theory	<b>Mr. Petar Marevic:</b> When atomic nucleus goes pear-shaped
15:06	<b>Ms. Kinga Sra Bod:</b> Quantum game theory	<b>Mr. Ron Kripk:</b> Neutron detection in NeuLAND
15:24	<b>Miss Oana Daciana Botta and Miss Loredana Angelica Mares:</b> Electric and magnetic characterisation of the fluorescence properties of a quantum dot-liquid crystal composite	<b>Mr. Florian Lippert:</b> Nanoparticles - Production and characterisation
15:42	<b>Miss Valeriya Mykhaylova:</b> Phase diagrams in QCD	<b>Miss Joanna Peszka:</b> Exotic nuclei decay products detection by using Optical Time Projection Chamber
16:00	Coffee break	

Tuesday 16<sup>th</sup> August

Session 9 (9:30 - 11:00)

	Material Physics 4 (B1)	Particle Physics 2 (B2)
09:30	Mr. Adrian Salo: Creation of Superoxide at the Qo active site of the BC1 complex	Mr. Jack Woolley: Dynamics of Molecular Ring Currents
09:48	Ms. Bettina Leibundgut: Oxidic Thin-Film Quasicrystals	Mr. Dominik Gerstung: Large- $N_c$ Constraints on Nuclear Forces
10:06	Mr. Viktor Knye: Optical conductivity of graphene	Mr. Louis Varriano: Neutron-mirror neutron oscillations in a residual gas environment
10:24	Ms. Maria Gieysztor: PEDOT:PSS as a transparent electrode in perovskite solar cells	Ms. Aleksandra Snoch: Prototype of Time-of-Flight detector for NA61/SHINE experiment
11:00	Coffee break	