

Parallel Session I, Thursday 11:00 am – 12:30 pm

Room C–114: Statistics, Cosmology, Philosophy of Physics, and Physics Education

Chair: Pouya Khaghani, Laurentian University, Canada

- 11:00 am **“Normal mode analysis of random-matrix spectral fluctuations”**
Gamaliel Torres Vargas, Universidad Autónoma Metropolitana - Cuajimalpa, Mexico
- 11:15 am **“Thermodynamics of Black Holes in de Sitter Spacetimes”**
Fil Simovic, University of Waterloo, Canada
- 11:30 am **“Newton’s Second Something or Other”**
P James Norris, Idaho State University, USA
- 11:45 am **“Disseminate contemporary science ... For what?”**
Marcos Ramón Gomez Ortega, Museo Trompo Magico, Mexico
- 12:00 pm **“Closing the Gender Gap in Engineering and Physics: The Role of High School Physics”**
Eamonn Corrigan, University of Guelph, Canada
- 12:15 pm **“Integration and Evaluation of Coding in a First Year Integrated Physics and Calculus Courses”**
Matt Steffler, University of Guelph, Canada

Room C–203: Nuclear Physics

Chair: Janet Rumleskie, Laurentian University, Canada

- 11:00 am **“Shape Coexistence I Neutron Deficient Mercury Isotopes”**
Andrew MacLean, University of Guelph, Canada
- 11:15 am **“Differential Cross Sections for $A \leq 3$ Nuclei in e^+p Coincidence”**
Jonathan Castellanos, Florida International University, USA
- 11:30 am **“The effect of a sheared flow on magnetic islands in plasmas with non-axisymmetric geometry”**
Maria Stefany Cancino Escobar, Institute of Nuclear Science, National Autonomous University of Mexico, Mexico

- 11:45 am **“An Environmental Test Stand for Large Area Testing of SiPMs for nEXO”**
Lucas Darroch, McGill University, Canada
- 12:00 pm **“Development of an in-Xe-gas Laser Ablation ion source for the Ba-tagging technique for nEXO. ”**
Melissa Medina Peregrina, McGill University, Canada
- 12:15 pm **“Radon Assay”**
Syed Muhammad Adil Hussain, Laurentian University, Canada

Room C–206: AMO and Quantum Physics

Chair: Alex Robillard, Laurentian University, Canada

- 11:00 am **“Hydrogen adsorption in MOF5: QLDFT calculations.”**
Joeluis Cerutti Torres, Havana University, Cuba
- 11:15 am **“Propagation of E-M waves in stratified media described by an amplitude and phase approach.”**
Hector Alejandro Jimenez Romero, Universidad Autónoma Metropolitana Unidad Iztapalapa, Mexico
- 11:30 am **“Dynamical tunneling in the quantum kicked top”**
Jack Davis, University of Waterloo, Canada
- 11:45 am **“Harnessing advanced classical computing techniques including distributed computing with tensor networks and machine learning for discovery in theoretical quantum physics”**
Marcus Edwards, University of Waterloo, Institute for Quantum Computing, Canada
- 12:00 pm **“Violation of an augmented set of Leggett-Garg inequalities using a non-invasive continuous in time velocity measurement”**
Shayan Majidy, Institute for Quantum Computing, Canada
- 12:15 pm **“KvN Mechanics for the time-dependent frequency harmonic oscillator”**
Alejandro Urzua, Instituto Nacional de Astrofísica, Óptica y Electrónica, Mexico

Parallel Session II, Thursday 5:00 pm – 6:30 pm

Room C–114: Condensed Matter & Materials I

Chair: Alex Robillard, Laurentian University, Canada

- 5:00 pm **“Array of strain induced quantum dots in graphene”**
Md Tareq Mahmud, Ohio University, USA
- 5:15 pm **“Preliminary Synthesis of Ruthenium Doped Oxyfluorides and Exploration of Polar and Magnetic Layered Oxides”**
Michael Shah, California State University Los Angeles, USA
- 5:30 pm **“Dynamical phase-mixing near metal-insulator transition in CuIr_2S_4 thiospinel crystals”**
Ahmed Ali, University at Buffalo, The State University of New York, USA
- 5:45 pm **“Low-frequency resistance noise study across the metal-insulator transition in VO_2 Nanobeams and thin films”**
Dasharath Adhikari, University at Buffalo, Department of Physics, USA
- 6:00 pm **“Transport properties and thermoelectric effects in gated silicene superlattices”**
Eric Jovani Guzmán Ortiz, Materials Research Institute, UNAM (National University of Mexico) Campus Morelia, Mexico
- 6:15 pm **“Examining lattice mode vibrations of calcite using spectroscopic techniques”**
Stephen Campbell, Memorial University of Newfoundland, Canada

Room C–203: Particle Physics I

Chair: Janet Rumleskie, Laurentian University, Canada

- 5:00 pm **“A Neutrino Disappearance Search for Sterile Neutrinos with the CAPTAIN-Mills Detector at the Los Alamos Neutron Science Center”**
Hasan Rejoanur Rahman, New Mexico State University, USA
- 5:15 pm **“Maintenance and troubleshooting of the SNO+ detector”**
Matthew Depatie, Laurentian University, Canada
- 5:30 pm **“A Position-time Reconstruction Algorithm for SNO+”**
Jie Hu, University of Alberta, Canada

- 5:45 pm **“WifiKID - Contact-free phonon detection in massive cryogenic absorbers”**
Richard Germond, Queens University, Canada
- 6:00 pm **“Point-Particle Catalysis”**
Peter Hayman, McMaster University, Canada
- 6:15 pm **“Interpretation of the LHCb Pc(4312) signal”**
Jorge Antonio Silva Castro, Universidad Nacional Autonoma de Mexico, Mexico

Room C–206: Physics in Medicine & Biology I

Chair: Alex LeBlanc, Laurentian University, Canada

- 5:00 pm **“Investigating the synergistic relationship between Aluminum and ionizing radiation using CGL1 and MCF10A cell lines. ”**
Konnor Kennedy, Laurentian University/Northern Ontario School of Medicine, Canada
- 5:15 pm **“Investigating Excited State and Ground State Dynamics of Provitamin D analogs in DPPC lipid Bilayers ”**
Danielle Sofferman, University of Michigan, USA
- 5:30 pm **“Superparamagnetic Fe₃O₄ nanoparticles and their potential for hyperthermia treatment for cancer”**
Bianca Paola Meneses Brassea, University of Texas at El Paso, USA
- 5:45 pm **“Quantification of vascular parameters in a rat model of tumor angiogenesis with contrast-enhanced micro-CT imaging”**
Lizbeth Rossana Ayala-Dominguez, Universidad Nacional Autónoma de México, Mexico
- 6:00 pm **“Some changes in pigeon bone associated with the dietary intake of nickel recovery slag as a grit source”**
Michel Lapointe, Laurentian University, Canada
- 6:15 pm **“Modeling evolution in a Long Time Evolution Experiment with E. Coli”**
Dario Alejandro Leon Valido, Institute of Cybernetics, Mathematics and Physics, Cuba

Parallel Session III, Friday 9:30 am – 10:30 am

Room C–114: No Session

Room A–226: Particle Physics III

Chair: Janet Rumleskie, Laurentian University, Canada

- 9:30 am **“Effective field theory analysis of the $\tau^- \rightarrow \pi^- \pi^0 \nu_\tau$ decays”**
Jesús Alejandro Miranda Hernández, Cinvestav, Mexico
- 9:45 am **“Acid/Base Extraction of Tellurium from SNO+ Scintillator”**
Stephanie Walton, Laurentian University, Canada
- 10:00 am **“SNO+ Calibration with the ^{16}N Source”**
Pouya Khaghani, Laurentian University, Canada
- 10:15 am **“Bubble Growth In Superheated C_3F_8 Bubble Chambers”**
Alex LeBlanc, Laurentian University, Canada

Room C–206: No Session

Parallel Session IV, Friday 2:00 pm – 3:30 pm

Room C–114: Condensed Matter & Materials II

Chair: Matt Steffler, University of Guelph, Canada

- 2:00 pm **“Dynamics, structure and self-assembly of colloidal mixtures”**
Jose Ramon Villanueva-Valencia, University of Guanajuato, Mexico
- 2:15 pm **“Ground state properties of the Modulated XY chain in the Transverse magnetic field”**
Toplal Pandey, Laurentian University, Canada
- 2:30 pm **“The effect of chemically and thermally Reduced Graphene Oxide on the electronic conductivity of LiFePO_4 composites”**
Sarah Yasharahla, Howard University, USA
- 2:45 pm **“Thermal Resistance Scaling of Silicon Phononic Crystals”**
Alexander Robillard, Laurentian University, Canada

- 3:00 pm **“Hydrogels films with CNTs for biosensing applications”**
Paloma Vilchis Leon, Iberoamericana University, Mexico
- 3:15 pm **“Engineering Topological Quantum Dots in Graphene Nanoribbons”**
Paul Butler, University of California, Berkeley, USA

Room C–203: Particle Physics II

Chair: Syed Muhammad Adil Hussain, Laurentian University, Canada

- 2:00 pm **“SNO+ and Supernovae”**
Michal Rigan, Laurentian University (SNOLAB), Canada
- 2:15 pm **“A Supernova Calibration Source for SNO+”**
Janet Rumleskie, Laurentian University, Canada
- 2:30 pm **“Determining the backgrounds in the HALO 1kT Prototype Detectors”**
Esther Weima, Laurentian University, Canada
- 2:45 pm **“Detecting a Second, Unknown Reactor with Antineutrinos for Mid-Field Nonproliferation Monitoring”**
Daine Danielson, The University of Chicago, USA
- 3:00 pm **“Measurement of Electron Beam Polarization Through Tau Forward-Backward Polarization Asymmetry”**
Caleb Miller, University of Victoria, Canada

Room C–206: Physics in Medicine & Biology II and Astrophysics

Chair: Michel Lapointe, Laurentian University, Canada

- 2:00 pm **“A multimodal interferometry technique for detection and classification of tissue interfaces”**
Rohith Kaiyum, York University, Canada
- 2:15 pm **“The spatially resolved properties of galactic winds: Characterization and modern techniques of study”**
Carlos Lopez-Coba, Universidad Nacional Autonoma de Mexico, Mexico

- 2:30 pm **“Morphokinematic Structure of the Planetary Nebula NGC 2346”**
Leonardo Espinoza, Instituto de Estudios Avanzados de Baja California A.C,
Mexico
- 2:45 pm **“VERITAS Observations of Fast Radio Bursts”**
Matthew Lundy, McGill University, Canada
- 3:00 pm **“Line Identification in the Herschel SPIRE Spectral Feature Catalogue”**
Christopher Benson, University of Lethbridge, Canada