Preliminary Program TCP 2018, September 30 - October 5, Traverse City, Michigan, USA

Monday

Quantum State Manipulation and Quantum Information

9:00 **Welcome**

9:20 **Quantum information using trapped ions - status and perspectives: R. BLATT**

9:55 Ground-state cooling and coherent control of ions in a Penning trap: R. THOMPSON

10:20 Thermometry of a single trapped ion by imaging: B. SRIVATHSAN

10:45 ***Fundamental Interactions and Symmetries & Antimatter***

11:15 **A 1.5 parts-per-billion measurement of the antiproton magnetic moment: C. SMORRA**

11:40 PUMA: antiProton Unstable Matter Annihilation: N. NAKATSUKA

Precision Spectroscopy and Frequency Standards

2:00 **Atomic clocks with trapped ions – status and perspectives: E. PEIK**

2:35 An 27Al+ quantum-logic clock with 1.0E-18 systematic uncertainty: S. BREWER

3:00 ***Trapped Antimatter***

3:30 **Observation of the hyperfine spectrum of antihydrogen and perspectives: M. HAYDEN**

4:05 Status of the antihydrogen hyperfine structure measurement in a beam by ASACUSA: M. SIMON

4:30 The AEGIS experiment at CERN: Probing antimatter gravity: G. BONOMI

4:55 Positron Production and Storage for Antihydrogen Production: V. MAECKEL

Tuesday

QED effects

8:30 **Challenging QED with atomic Hydrogen: T. UDEM**

9:05 The hyperfine-puzzle of strong-field bound-state QED: W. NÖRTERSHÄUSER

9:30 ***Quantum State Manipulation and Quantum Information & Applications***

10:00 **Quantum simulators with large ion numbers - how to make them - what to learn from them: N. LINKE**

10:35 Interacting Rydberg ions: C. ZHANG

11:00 **Production and Study of Polyanionic Metal Clusters: L. SCHWEIKHARD**

11:35 The Intense Beam Experiment (IBEX) Paul trap for accelerator physics studies: L. MARTIN

Highly Charged Ions in Traps

2:00 **Stringent tests of bound-state QED: F. KOEHLER-LANGES**

2:35 Status of the HITRAP decelerator and ion trapping experiments: Z. ANDELKOVIC

3:00 The Penning-trap mass spectrometer PENTATRAP: A. RISCHKA

3:25 ***Plasmas and Collective Behavior & Storage Rings***

3:55 **Progress toward creating electron-positron plasmas in a magnetic dipole trap for basic plasma science and astrophysics: E. STENSON**

4:30 Evaporative cooling of atomic and molecular ions by autoresonance in an electrostatic ion beam trap: O. HEBER

4:55 Studying proton-capture reactions on stored radioactive ions for nuclear astrophysics: J. GLORIUS

5:30 **Poster session**

Wednesday

Radioactive Isotopes in Traps and Storage Rings

8:30 **What did we learn by mass spectroscopy use of storage rings or traps since TCP14?: D. LUNNEY**

9:05 The N = 32 neutron shell closure viewed through mass measurements with TITAN's MR-TOF-MS: T. DICKEL

9:30 ***Fundamental Interactions***

10:00 **Precision Measurement of the Electron's EDM Using Trapped Molecular Ions - Status and Perspectives: Y. SHAGAM**

10:35 Ba-ion extraction from high pressure Xe gas for double-beta decay studies with nEXO: T. BRUNNER

11:00 muCool: A novel low-energy muon beam for future precision experiments: I. BELOSEVIC

11:25 Search for the electric dipole moment of the muon: P. SCHMIDT-WELLENBURG

11:50 Precision mass measurements with light ions: Tritium Q-value, the He-3/HD puzzle and resolving ro-vibrational energy: E. MYERS

Conference Excursions

Thursday

Storage Ring Physics

8:30 **Electron scattering from 208Pb and 132Xe ions at the SCRIT facility: K. TSUKADA**

9:05 Laser cooling of relativistic lithium-like 16O5+ ion beams at the heavy ion storage ring CSRe: H. WANG

9:30 Upgrading the Isochronous Mass Spectrometer by measuring velocity of stored ions: R. CHEN

9:55 **The Heidelberg Cryogenic Storage Ring CSR: Rotational Cooling and Electron Collisions of Molecular Ions: A. WOLF**

10:30 ***Radioactive Isotopes in Traps***

10:55 Penning-Trap Mass Spectrometry of the Heaviest Elements with SHIPTRAP: O. KALEJA

11:25 Probing nuclear isomers using phase-imaging ion-cyclotron-resonance detection with ISOLTRAP at CERN: J. KARTHEIN

11:50 Mass measurements of heavy and superheavy nuclei by multireflection time-of-flight mass spectrograph: P. SCHURY

Fundamental Interactions and Symmetries

2:15 **Search for New Physics with Trapped Charged Atoms and Molecules: M. SAFRONOVA**

2:50 A New Concept for Searching for Time Reversal Symmetry Violation Using Pa-229 Ions Trapped in Optical Crystals: J. SINGH

3:25 ***Fundamental Interactions & Radioactive Isotopes in Traps***

3:55 **Searching for Tensor Currents in the Weak Interaction Using Lithium-8 Beta Decay: M. BURKEY**

4:20 The MORA project: P. DELAHAYE

4:45 TAMUTRAP: An Ion trap facility for weak interaction studies: P. SHIDLING

6:00 **Conference Dinner**

Friday

Precision Spectroscopy and Frequency Standards

8:30 **The challenge of a nuclear frequency standard: Towards a precise energy determination of 229mTh: L. VON DER WENSE**

9:05 Trapping and sympathetic cooling of single Thorium ions for spectroscopy: F. STOPP

9:30 A Lutetium-ion optical atomic clock: K. ARNOLD

Radioactive Isotopes in Traps

10:25 Ion trapping developments at the University of Notre Dame: M. BRODEUR

10:50 RFQ ion trap for laser spectroscopy measurements at BECOLA facility*: A. MILLER

11:15 MIRACLS- the Multi Ion Reflection Apparatus for Collinear Laser Spectroscopy: S. MALBRUNOT-ETTENAUER

11:40 Recent developments and results at JYFLTRAP: T. ERONEN

12:05 **Closing remarks**