

# The 12<sup>th</sup> International Workshop on Fundamental Physics Using Atoms (FPUA2020)

January 9 (Thu.)

Okochi Hall, RIKEN Wako campus

Session 1: 10:30 - 12:05

Chair: Yasuhiro Sakemi (CNS, University of Tokyo)

Yuichi Ichikawa (RIKEN)

Opening address 5

John Doyle (Harvard University / Okayama University) 35 + 5

“PeV Physics with peV Polyatomic Molecules - Recent Progress Report”

Takashi Higuchi (RCNP, Osaka University) 20 + 5

“Production of ultra-cold neutrons at TRIUMF and prospects for a neutron EDM measurement”

Yuki Miyamoto (Okayama University) 20 + 5

“Coherence amplification and fundamental physics in rare earth doped crystals”

Lunch time 12:05 - 13:30

Session 2: 13:30 – 14:35

Chair: Hiroki Nagahama (CNS, University of Tokyo)

Stefan Ulmer (RIKEN / CERN) 35 + 5

“BASE: High-Precision Comparisons of the Fundamental Properties of Antiprotons and Protons”

Motoki Sato (University of Tokyo) 20 + 5

“Magnet Stabilization at BASE”

Break 20'

Session 3: 15:05 – 16:10

Chair: Utako Tanaka (Osaka University)

Jun Kobayashi (Kyoto University / JST PRESTO) 35 + 5

“Test for the stability of electron-to-proton mass ratio using ultracold molecules”

Haruki Torii (Tokyo Institute of Technology) 20 + 5

“Electronic Excitations of Atoms Encapsulated in the C60 Fullerene for Radiative Emission of Neutrino Pair”

Break 20'

Session 4: Short Talks 16:30 –

Chair: Yuichi Ichikawa (RIKEN)

Akira Fujieda (Okayama University) ~10

“Ba-ion spectroscopy experiment for high-intensity  $\gamma$ -ray source using heavy ions”

Hiroyuki Kaino (Okayama University) ~10

“Search for VUV signal from isomer level of Th-229 using synchrotron radiation X-ray”

Naohiro Tomiyama (Tokyo Metropolitan University) ~10

“Reconsideration of the electronic term of the Schiff moment in diamagnetic molecules”

Yusuke Ueno (Kyoto University) ~10

"Isotope-selective loading of  $\text{Yb}^{+}$  in a RF trap by photoionization for precise measurement of isotope shifts"

Hiroki Saito (Osaka University) ~10

"Design of an on-chip ion trap operating with a single control voltage"

Ce Zhang (Peking University) ~10

"Preparation for phase-0 experiment of muonium ionization with 1S-2S excitation"

Get-together party@1st cafeteria 18:00 - 20:00

**January 10 (Fri.)**

**Okochi Hall, RIKEN Wako campus**

Session 5: 10:30 - 11:20 Chair: Tsutomu Mibe (KEK)

Koji Yoshimura (Okayama University) 20 + 5

"Measurement of ultra-low energy level of Thorium-229 Isomer with high intense X-ray beam"

Sohtaro Kanda (KEK) 20 + 5

"Cascade de-excitation and spin-exchange collisions of muonic hydrogen atom"

Break 20'

Session 6: 11:40 – 12:30 Chair: Takahiko Masuda (Okayama University)

Takahiro Hiraki (Okayama University) 20 + 5

"Precise laser spectroscopy of muonium"

Shun Seo (University of Tokyo) 20 + 5

"Precise spectroscopy of muonium hyperfine structure using Kr-He mixture gas"

Lunch Time 12:30 - 13:30

Session 7: 13:30 – 14:30 Chair: Akihiro Yoshimi (Okayama University)

Takatoshi Aoki (University of Tokyo) 20 + 5

"Electron EDM search and study of parity non-conservation effect using laser cooling of Fr to probe new physics beyond the standard model"

Yutaka Shikano (Keio University) 20 + 5

"Axion Detection by Superconducting Qubit"

Noboru Sasao (Okayama University) 10

Closing remarks

FYI:

RIKEN Seminar 15:00 – 16:30 @ 3F meeting room, Ikenohata Building, RIKEN Wako campus

Akira Furusawa (University of Tokyo)

"Large-scale optical quantum computing with quantum teleportation" (in Japanese)