

(AMP2021)

Monday, 21 June 2021 - Wednesday, 23 June 2021

(MVL)

Scientific Programme

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Atomic and Molecular Physics Division Workshop (AMP2021)

□□□□ : 6□ 21□(□) 17:00 – 6□ 23□(□) 18:00

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6/21 □□□ 17:00 - 18:00 Business Meeting + Reception

6/22 □□□ 10:00 – 12:00 Session A: Atomic Metrology, □□: □□□ (□□□)

- (GIST) “High-resolution molecular spectroscopy”
- (KRISS) “Yb optical lattice clock at KRISS”
- (ADD) “NMR gyro based on spin exchange optical pumping”

6/22 □□□ 13:00 – 15:00 Sessuion: B Molecular Physics, □□: □□□ (□□□□)

- (KAIST) “Real-time Dynamics of Nonadiabatic Transitions in Photodissciation & Photodetachment”
- (□□□) “Electronic circular dichroism spectroscopy of chiral molecules and ions in gas phase”
- (UNIST) “Scattering of adiabatically aligned molecules by nonresonant optical standing waves”
- (KRISS) “Strongly interacting Fermi-Fermi mixture of dysprosium and potassium atoms”

6/22 □□□ 15:00 – 16:30 Session C: Atom-laser interactions, □□: □□□ (□□□□)

- Thomas Schultz (UNIST) “Multi-dimensional laser spectroscopy: Measuring broad-band, high-resolution, absolute-frequency rotational spectra in a mass spectrometer”
- (GIST) “Bright terahertz beam generation from laser-gas/solid interaction”
- (GIST) “□□□ □□□ □□ □□□□ □□”

6/22 □□□ 16:30 - 18:00 Session D: Poster Session, □□: □□□ (□□□)

6/23 □□□ 10:00 – 12:00 Session E: Quantum Optics, □□: □□□ (KRISS)

- (□□□) “Induced Coherence in Spontaneous Four-Wave Mixing from Atomic Ensembles”
- (POSTECH) “Trapped ions and cavity QED”
- (□□□□□) “Atomic data and collisional-radiative modeling in plasma”
- (KAIST) “Advanced hybrid Quantum-Classical Algorithm via Mean-Operators”

6/23 □□□ 13:00-15:00

Session F: Instrument, □□: □□□ (KRISS)

- (KRISS) “□□ FEM software□ □□□□ □□ □□”
- (KAIST) “On-chip Kerr-comb/ frequency comb”
- (KRISS) “FPGA □□ □□□ □□□ □ □□□□□ □□□ □□”
- (KRISS) “□□ □□□ □□□ □□□□ □□”
- (□□□) “Compact Fiber-coupled Modulation Transfer Spectroscopy Module for Highly Stable Laser Frequency”

6/23 □□□ 15:00 – 17:00

Session G: Quantum Computing, □□: □□□ (KAIST)

- (□□□) "Trapped-Ion Quantum Simulation with qubits and phonons"
- (□□□□) "Engineering trapped ions for quantum computing"
- (KRISS) "KRISS □□□ □□ □□□ □□ □□□□□ □□ □□"
- (□□□□) "Programmable 5 qubit entanglement using laser pulse shaping"

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Workshop on Quantum Information Science with Cold Atoms (□□: □□□)
6□ 24□(□) – 6□ 25□(□), □□□□ APCTP
□□□□ <https://sites.google.com/view/wqisca2021/home>

6/24 □□□ 10:00-12:00 Tutorial session I
□□□(KRISS) "Laser cooling"

6/24 □□□ 13:00-15:00 Session A: Quantum information science using Rydberg atoms
□□□(CALTECH) "Quantum Device Benchmarking from Many-body Quantum Chaos"
□□□(MIT) "Emergent quantum randomness and its application for quantum device benchmarking"
□□□(KAIST) "Rydberg-atom programmable quantum simulator"

6/24 □□□ 15:15-17:15 Session B: Degenerate quantum gases
□□□(HKUST) "Non-Hermitian spin-orbit-coupled quantum gases"
□□□(□□□) "Saturation of defects in a rapidly quenched Bose gas"
□□□(LENS) "Programmable quantum vortex collider revealing sound emission and annihilation"

6/25 □□□ 10:00-12:00 Tutorial session II
□□□(KAIST) "Optical lattices"

6/25 □□□ 13:30-14:30 Session C: Quantum simulations in optical lattices I
Y. Takahashi (Kyoto Univ.) "Disorder-induced Thouless pumping of ultracold atoms in an optical lattice"
I. Danshita (Kindai Univ) "Disorder-induced Thouless pumping of ultracold atoms in an optical lattice"

6/25 □□□ 15:00-16:20 Session D: Quantum simulations in optical lattices II
T. Fukuhara (RIKEN) "Single-site-resolved imaging of ultracold atoms in a triangular lattice"
B. Yang (IQOQI) "Many-body dynamics in an extended Bose-Hubbard quantum simulator"