

ATOMIC PHYSICS WITH RARE ATOMS PROGRAM

JUNE 1-3, 2009
340 WEST HALL

Monday, June 1st:

- 9:00 am **Registration and informal gathering**
- 10:30 am **Coffee Break (337 West Hall)**
- 11:00 am **Lab tours**
G. Raithel, A. Leanhardt, W. Lorenzon, T. Chupp
- 12:00 pm **Lunch (on your own)**
- 2:00 pm **Welcoming Remarks**
T. Chupp, G. Raithel, G. Kane, and C. Gelbke
- Topic: Laser Spectroscopy and Nuclear Radii*
Session Chair: T. Chupp
- 2:30 pm **Gordon Drake (University of Windsor)**
“Sizing Halo Nuclei with Isotope Shifts”
- 3:00 pm **Peter Mueller (Argonne National Laboratory)**
“Laser Trapping and Probing of Exotic Helium Isotopes”
- 3:30 pm **Coffee Break (337 West Hall)**
- 4:00 pm **Wilfried Nörtershäuser (Mainz)**
“Extending Collinear Laser Spectroscopy Towards the Lightest Elements: The Nuclear Charge Radius of the One-Neutron Halo Isotope Be-11”
- 4:30 pm **Jonathan Billowes (University of Manchester)**
“Laser Spectroscopy of Radioactive Atoms using an RFQ Ion Cooler/Trap”
- 5:00 pm **Iain Moore (University of JYVÄSKYLÄ)**
“Towards the Study of Heavy Elements at IGISOL with Resonance Ionization Spectroscopy”
- 5:30-5:45 pm **Charles Crowley (University of Michigan)**
“Rare Isotopes Detected in Stellar Spectra”

Tuesday, June 2nd:*Topic: Ion Traps, Storage Rings, Antihydrogen**Session Chair: G. Bollen*

- 9:00 am **Michael Block (GSI)**
“Prospects for Mass Measurements of Super-Heavy Elements with Penning Traps”
- 9:30 am **Ryan Ringle (NSCL/TRIUMF)**
“Atomic Physics Techniques Employed at TITA”
- 10:00 am **Thomas Stoehlker (GSI-Darmstadt)**
“The Science Program of the Atomic Physics Collaborations at FAIR”
- 10:30 am Coffee Break (337 West Hall)
- 11:00 am **Makoto Fujiwara (TRIUMF)**
“Towards Fundamental Symmetries Test with ALPHA Antihydrogen Experiment”
- 11:30 am **Gerald Gabrielse (Harvard University)**
“Low Energy Investigations of Fundamental Symmetries with Trapped Particles, Antihydrogen and Molecules”
- 12:00 pm Discussion
- 12:30 pm *Catered Lunch in 337 and 335 West Hall*

*Topic: Atom Traps, applications**Session Chair: P. Mantica*

- 2:00 pm **John Behr (TRIUMF)**
“Decay Experiments with Atom Traps”
- 2:30 pm **Melissa Jerkins (Raizen Lab at University of Texas at Austin)**
“Using Cold Atoms to Measure Neutrino Mass”
- 3:00 pm **Klaus Jungmann (KVI, University of Groningen)**
“Physics at the TRImP Facility of KVI”
- 3:30 pm Coffee Break (337 West Hall)
- 4:00 pm **William Williams (Argonne National Laboratory)**
“Atom Trap Trace Analysis with Kr/Ar”
- 4:30 pm **Dan Melconian (Texas A&M University/Cyclotron Institute)**
“The Cyclotron Institute Upgrade at Texas A&M”
- 5-5:30 pm Discussion
- 6:30-10 pm *Workshop Dinner Party at the UM Museum of Art (Apse Room)*

Wednesday, June 3rd:*Topic: Parity, anapole moments***Session Chair: J. Behr**

- 9:00 am** **Luis Orozco (University of Maryland)**
“Anapole Moment Measurement in Fr”
- 9:30 am** **Gerald Gwinner (University of Manitoba)**
“Towards an Optical Parity Violation Experiment in Francium”
- 10:00 am** **Discussion**
- 10:30 am** Coffee Break (337 West Hall)
- 11:00 am** **Nicholas Stone (Oxford University & University of Tennessee)**
*“G-Factor Measurements by Recoil-in-Vacuum Method: A Priori
Calculation of the Hyperfine Interaction in Highly Stripped Atoms”*
- 11:30 am** **Philip Levy (TRIUMF)**
“Polarized Rare Isotope Beams”
- 12:00 pm** **Matthew Pearson (TRIUMF)**
“Nuclear Moment Measurements”
- 12:30 pm** **Catered Lunch in 337 and 335 West Hall**

*Topic: EDM's, FRIB discussion***Session Chair: Z.-T. Lu**

- 2:00 pm** **Clark Griffith (NIST, Boulder)**
“New Limit on the Hg EDM”
- 2:30 pm** **Aaron Leanhardt (University of Michigan)**
“Molecular EDM – WC”
- 3:00 pm** **William Trimble (Argonne National Laboratory)**
“Progress on the Search for EDM in Ra-225”
- 3:30 pm** **Eric Tardiff (TRIUMF)**
“The RadonEDM Experiment”
- 4:00 pm** **Gordy Kane (University of Michigan)**
“Theoretical Perspectives on EDM Limits”
- 4:15 pm** Coffee Break (337 West Hall)
- 4:45 pm** **Bradley Sherrill (Michigan State University)**
Discussion Leader on Physics and Atomic Physics at FRIB
- 5:15 pm** **Discussion**
- 6:00 pm** **Workshop Concludes**