Nuclear Masses in Astrophysics for the Next 25 Years

18 – 22 August 2025

Welcome Hotel Darmstadt City, Germany

AGENDA

Monday, August 18th

Time			Duration
09:00	Precision Mass Measurements with Trapped Exotic Ions	Klaus Blaum	60'
10:00	Precision Mass Measurements of Neutron-Rich Rare-Earth Isotopes and Fission Fragments	Arthur Jaries	30'
10:30	Coffee Break		30'
11:00	Offline Commissioning of the Double Penning Trap PIPERADE	Gauthier Guignard	30'
11:30	Precision Mass Measurements with the Canadian Penning Trap for Nuclear Astrophysics	Adrian Valverde	30'
12:00	Lunch		60'
13:00	Lecture: Nuclear Masses and R-Process Nucleosynthesis	Almudena Arcones	60'
14:00	R-Process Calculations Using Ab Initio Masses From VS-IMSRG	Jan Kuske	30'
14:30	Coffee Break		30'
15:00	Present and Future of the Rare-RI Ring	Daisuke Nagae	30'
15:30	Advancing FRIB's Science Program with A High-Voltage Mr-Tof Mass Spectrometer and Separator	Franziska Maier	30'
16:00	Study of Nucleosynthesis Processes with ISOLTRAP	Maroua Benhatchi	30'
16:30	Mass Measurements of Actinides at the High-Precision Penning-Trap Mass Spectrometer TRIGA-Trap	Tanvir Sayed	30'

Tuesday, August 19th

Time			Duration
9:00	Lecture: Nuclear Theory	Achim Schwenk	60'
10:00	Nuclear Two-Photon Decay Investigation of 98mo at the ESR Heavy Ion Storage Ring	Carlo Forconi	30'
10:30	Coffee Break		30'
11:00	Precision Mass Measurements of Neutron-Rich Sn Isotopes and Its Impact on Stellar Nucleosynthesis	Ali Mollaebrahimi	30'
11.30	Precision Mass Measurements of Neutron-rich Isomers For the R-Process	Miikka Winter	30'
12:00	Lunch		60'
13:00	Lecture: Storage Ring Mass Spectrometry	Yuri Litvinov	60'
14:00	Schottky & Isochronous Mass Spectroscopy	Esther Menz	30'
14:30	Coffee Break		30'
15:00	Thermal Evolution of Accreting Neutron Stars	Martin Javier Nava Callejas	30'
15:30	High-Precision Penning-Trap Mass Measurements of Light Nuclei and Beyond	Fabian Heisse	30'
16:00	MR-ToF-MS At IGISOL	Ville Virtanen	30'
16:30	Unlocking Rare Isotope Masses: The Reach of TOF-Bρ Measurements	Irin Sultana	30'

Wednesday, August 20th

Time			Duration
9:00	Organizational: Welcome		5'
9:05	Opportunities for Mass Measurements at NuCARIBU	Guy Savard	30'
9:35	Recent Precision Mass Measurements at ISOLTRAP	Christoph Schweiger	30'
10:05	Status of NUSTAR @ FAIR	Zsolt Podolyak	20'
10:25	Coffee Break		30'
10:50	A TITAN Journey Towards the R-Process	Anna Kwiatkowski Coulter Walls	30'
11:20	Recent Progress in Isochronous Mass Measurement Experiment	Ruijiu Chen	30'
11:50	The Crust of Accreting Neutron Stars: Role of Nuclear Binding Energies	Nikolai Shchechilin	20'
12:10	Lunch		80'
13:30	Microscopic Mean-Field Mass Models for Astrophysics Applications	Luis Gonzales Miret Zaragoza	30'
14:00	Rare-RI Ring Facility At RIBF--Present Status	Takayuki Yamaguchi	30'
14:30	Mass Measurements for Nuclear Structure Using the CPT	Maxime Brodeur	20'
14:50	Nuclear Structure Studies of the Heaviest Elements with the SHIPTrap Mass Spectrometer @GSI	Francesca Giacoppo	20'
15:10	Poster Session: Short Talks		20'
15:30	Poster Session: Poster (& Coffee Break)		90'

Thursday, August 21st

Time			Duration
9:00	Current Status of Mass Measurements in CSRe/Lanzhou	Yuhu Zhang	30'
9:30	Nuclear Masses and Astrophysics in the NuPECC Long Range Plan 2024	Anu Kankainen	30'
10:00	Mass Measurements for Explosive Nuclear Astrophysics and Exploration Beyond the Sn-132 and Pb-208 Diagonal	Moritz Pascal Reiter	20'
10:20	Coffee Break		30'
10:50	Nuclear Masses for Heavy Element Nucleosynthesis	Gabriel Martinez Pinedo	30'
11:20	Developments of Penning Trap Mass Spectrometry at LEBIT For Measurements of Astrophysical Interest	Ryan Ringle	30'
11:50	Mass Measurements of Neutron-Rich A≈90 Nuclei Constrain Element Abundances	Wenduo Xian (Remote)	20'
12:10	Lunch		80'
13:30	Machine Learning Techniques Used to Determine Accurate Binding Energies	Ian Bentley	30'
14:00	Tof-Bρ Mass Measurements with the S800 Spectrometer	Alfredo Estrade	20'
14:20	Mass Measurements of Neutron Rich Nuclei Along the R-Process Path Using the ToF-Bρ Method At FRIB	Zeren Korkulu	20'
14:40	How Well Do We Know the Basic Properties of Nuclei: Updates on the AME and NUBASE Nuclear Data Libraries	Filip Kondev	20'
15:00	Coffee Break		30'
15:30	Accelerating Mass Modeling with Scientific Machine Learning	Matthew Mumpower (Remote)	30'
16:00	Mass Measurements Of N-Z Nuclei	Zhuang Ge	20'
16:20	Impact of Experimental Mass of 70Kr on the 68Se Waiting-Point in rp-Process	Xing Xu	20'
16:40	White Paper		20'

Friday, August 22nd

Time			Duration
9:00	Broadband and High-Precision Mass Measurements of Thermalized Exotic Nuclei At GSI/FAIR	Timo Dickel	30'
9:30	The Nuclear Two-Photon Decay	Wolfram Korten	30'
10:00	Opportunities For Mass Measurements at Argonne's N=126 Factory	Jason Clark	20'
10:20	Coffee Break		30'
10:50	Bound-State Beta Decay Studies at ESR: Recent Results and Upcoming Experiments	Ragandeep Sidhu	20'
11:10	White Paper		50'
12:00	Concluding Remarks		10'
12:10	Lunch		