Symposium Mass Matters: Prospects of Bridging Nuclear Physics, Mass Spectrometry, and Astrophysics (SYMM)

jointly organised by
the Hadronic and Nuclear Physics Division (HK), and
the Mass Spectrometry Division (MS)

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The symposium will focus on the interplay between nuclear astrophysics, nuclear physics, and mass spectrometry, with particular emphasis on heavy element nucleosynthesis and the role of neutron capture rates. Measuring and understanding the nuclear masses of exotic nuclei are crucial for better constraining explosive nucleosynthesis processes. The afternoon session will spotlight ongoing efforts to measure neutron capture rates in the laboratory and explore their crucial role in shaping "live" remnants of explosive nucleosynthesis events in the cosmos, which are detected on Earth using Accelerator Mass Spectrometry (AMS).

Overview of Invited Talks and Sessions

(Lecture halls Kurt-Alder HS Chemie and HS 1 Physik)

Prepending Plenary Talks

PV III	Tue	9:00– 9:45	Kurt-Alder HS Chemie	**Nuclear Structure and Reaction Features in Nuclear Astrophysics** — •Michael Wiescher
PV IV	Tue	9:45–10:30	Kurt-Alder HS Chemie	**Nuclear astrophysics with radioactive beams** — •Artemis Spyrou

Invited Talks

SYMM 1.1	Tue	11:00–11:30	Kurt-Alder HS Chemie	**Mass measurements with RIBs** — •Guy Savard
SYMM 1.2	Tue	11:30–12:00	Kurt-Alder HS Chemie	**LUNA -Experimental challenges in Underground Nuclear Astrophysics Laboratory** — •Alba Formicola
SYMM 1.3	Tue	12:00–12:30	Kurt-Alder HS Chemie	**The r-process: connecting astrophysics and nuclear physics** — •Almudena Arcones
SYMM 2.1	Tue	14:00–14:25	HS 1 Physik	**Neutron-induced reactions and open questions in the s-process** — •Alberto Mengoni
SYMM 2.2	Tue	14:25–14:50	HS 1 Physik	**n-capture experiments in inverse kinematics** — •Rene Reifarth
SYMM 2.3	Tue	14:50–15:15	HS 1 Physik	**Single atom counting of live interstellar radionuclides in natural archives** — •Johannes Lachner

Sessions

SYMM 1.1–1.3	Tue	11:00–12:30	Kurt-Alder HS Chemie	**Mass Matters: Prospects of Bridging Nuclear Physics, Mass Spectrometry, and Astrophysics**
SYMM 2.1–2.3	Tue	14:00–15:30	HS 1 Physik	**Focus Session: Neutron capture reactions in the cosmos and the lab (joint session HK/SYMM)**