

Workshop on Fundamental Physics with Exotic Atoms

LNF-INFN, Frascati, 23 – 25 June 2025

Aula Salvini

For online: zoom link:

<https://infn-it.zoom.us/j/82847350737>

Program :

23th June:

Chair: Catalina Curceanu

10:15 – 10:30 **Arrival and Registration**

10:30 – 11:00 Welcome (Catalina Curceanu)

11:00 – 11:45 *Coffee Break*

11:45 – 12:15 Diana Sirghi: *The physics of the kaonic atoms in the last 25 years*

12:15 – 12:45 Catia Milardi, *DAFNE setup and optimization for the kaonic deuterium run of SIDDHARTA-2*

12:45 – 13:15 Oton Vazquez Doce: *Latest measurements with strangeness (and more) using femtoscopy (online)*

13:30 – 15:00 *Lunch*

Chair: Magda Skurzok

15:00 – 15:30 Florin Sirghi: *Overview of Technological Challenges in Exotic Atom Precision Experiments*

15:30 – 16:00 Antonino Marciano: *A stochastic gradient flow approach to nuclear and atomic physics, and the measurement problem*

16:00 – 16:30 *Coffee Break*

16:30 – 17:00 Johann Marton: *Exotic atom research and related topics - work with Hannes Zmeskal 1980 – 2024*

17:00 – 17:30 Fuminori Sakuma: *Kaonic nuclei – progress and prospects at J-PARC*

17:30 – 18:00 Slawomir Wycech: *ON A QUARK COMPONENT TO $\Lambda(1405)$ (online)*

Possible other talk(s)

24th June:

Chair: Johann Marton

9:30 – 10:00 Luca De Paolis: *KAMEO: Probing E2 Nuclear Resonance in Kaonic Molybdenum Isotopes*

10:00 – 10:30 Francesco Sgaramella: *Kaonic Atoms X-ray Spectroscopy with SIDDHARTA-2: The First Measurement of Kaonic Deuterium*

10:30 – 11:00 Paul Indelicato: *All-order QED corrections on kaonic atoms*

11:00 – 11:45 *Coffee Break*

11:45 – 12:15 Simone Manti: *Kaonic Neon Spectroscopy: Testing Bound-State QED, Extracting the Kaon Mass and Probing Beyond Standard Model Physics*

12:15 – 12:45 Tadashi Hashimoto: *Kaonic atom experiments at J-PARC*

12:45 – 13:15 Jaroslava Obertova: *Recent results on kaonic atoms from theory*

13:30 – 15:00 *Lunch*

Chair: Simone Manti

15:00 – 15:30 Pawel Moskal: *Advancement in Positronium and Quantum Entanglement Imaging with J-PET*

15:30 – 16:00 Damir Bosnar: *Kaonic atoms in DAFNE with HPGe detector*

16:00 – 16:30 *Coffee Break*

16:30 – 17:00 Nicola Bortolotti: *QFT with generalized statistics and quantum gravity phenomenology (online)*

17:00 – 17:30 Kristian Piscicchia: *Quantum foundations phenomenology in underground experiments at LNGS*

17:30 – 18:00 Masaki Hori: *Laser spectroscopy of kaonic helium at DAPHNE*

Social Dinner: 20:00 restaurant, Frascati

25th June:

Chair: Francesco Sgaramella

10:00 – 10:30 Francesco Artibani: *Novel CZT Detectors for kaonic atoms spectroscopy*

10:30 – 11:00 Francesco Clozza: *Silicon Drift Detectors for the new generation of Kaonic Atoms measurements*

11:00 – 11:45 *Coffee Break*

11:45 – 12:15 Alexander Khreptak: *Positronium: An Exotic Atom at the Edge of Matter and Antimatter*

12:15 – 12:45 Magdalena Skurzok: *Dalitz plot determination for $oPs \rightarrow 3\gamma$ decay using J-PET detection system*

12:45 – 13:15 Mihai Iliescu: *SPHINX: Structure Probing by Holographic Imaging at Nanometer scale with X-ray lasers*

13:15 – 13:30 *Discussions*

13:30 – 15:00 *Lunch*