FONDAZIONE BRUNO KESSLER

ECT*
EUROPEAN CENTRE
FOR THEORETICAL STUDIES
IN NUCLEAR PHYSICS AND RELATED AREAS

WORKSHOP

Towards a ROadmap of the Crucial measurements of Key observables in Strangeness reactions for neutron sTARs equation of state

Trento, 9 - 13 October 2023

Low Energy Strangeness QCD (LESQCD) governs the interaction, near-threshold, between strange and standard nuclear matter with implications in fundamental physics and astrophysics, where the strength of this interaction impacts the EOS of neutron stars. Given its non-perturbative nature, LESQCD is described by several theoretical models using different approaches. These models need experimental input parameters measurable with various complementary techniques, including kaonic atoms, kaon/hyperon interactions with one or more nucleons, and strangeness femtoscopy.Advancing the theoretical predictions demands improving the quality of the experimental observables; some of them still have to be measured for the first time, and others need a dramatically enhanced precision. A strong collaboration between the theoreticians and the experimentalists is then crucial towards a roadmap for establishing the most relevant measurements to be performed in the future. This is what the ROCKSTAR workshop is aiming at.

Organizers

Alessandro Scordo (Laboratori Nazionali di Frascati INFN, Italy), Catalina Curceanu (Laboratori Nazionali di Frascati INFN, Italy), Isaac Vidana (INFN, Sezione di Catania, Italy), Angels Ramos (Institut de Ciéncies del Cosmo, Barcelona, Spain), Fuminori Sakuma (RIKEN, Advanced Science Insitute-ASI, Japan), Damir Bosnar (University of Zagreb, Croatia), Oton Vasquez Doce (Laboratori Nazionali di Frascati INFN, Italy)

Keynote Speakers

T. Hashimoto, Tokai Research Establishment - Japan Atomic Energy Agency (JAEA), R. Kobayakawa, Osaka Univ. (RCNP), M. Iwasaki, RIKEN, J. Pochodzalla, Johannes Gutenberg-Universität Mainz, J. Zmeskal, SMI - Vienna, M. Merafina, Università degli Studi di Roma “La Sapienza”, E. Friedman, Racah Institute of Physics, The Hebrew University, Jerusalem, A. Gal, Racah Institute of Physics, The Hebrew University, Jerusalem, E. Hiyama, Nara Women's University (NWU), A. Feijoo, Instituto de Física Corpuscular (IFIC), D. Gazda, Nuclear Physics Institute (UJF), The Academy of Sciences of the Czech Republic, A. Nogga, Institut für Kernphysik (IKP), Forschungszentrum (FZ) Jülich GmbH, J. Leong, University of Adelaide, W. Weise, Technical University of Munich, N. Shevchenko, Nuclear Physics Institute (UJF), The Academy of Sciences of the Czech Republic, M. Illa, Department of physics, University of Washington, H. Kochankovski, Universitat de Barcelona, H. Le, Forschungszentrum Juelich M Schafer, Nuclear Physics Institute (UJF), The Academy of Sciences of the Czech Republic, Y. Kamiya, HISKP, Bonn University, A. Perego, Institut für Kernphysik (IKP), Technische Universität Darmstadt, A. Raduta, Horia Hulubei National Institute of Physics and Nuclear Engineering (IFIN HH), D. Chaterjee, Inter-University Centre for Astronomy and Astrophysics (IUCAA), H. Schulze, Sezione di Catania, Istituto Nazionale di Fisica Nucleare (INFN), L. De Paolis, Laboratori Nazionali di Frascati INFN, F. Sirghi, Laboratori Nazionali di Frascati INFN, F. Sgaramella, Laboratori Nazionali di Frascati INFN, D. Sirghi, Laboratori Nazionali di Frascati INFN, M. Iliescu, Laboratori Nazionali di Frascati INFN, K. Piscicchia, Museo storico della fisica e Centro di studi e ricerche "Enrico Fermi”, Rome, J. Wu, School of Physical Sciences, University of Chinese Academy of Sciences

Director of ECT*: Professor Gert Aarts

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EURO-LABS EUROPEAN LABORATORIES FOR ACCELERATOR BASED SCIENCES

INFN Istituto Nazionale di Fisica Nucleare

FRIB Theory Alliance