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

FONDAZIONE
BRUNO KESSLER

HYBRID Workshop

Exploring high-muB matter with rare probes

October 11-15, 2021

Abstract | Main Topics

Heavy-ion programs ad RHIC and LHC provided unprecedented insights into the properties of QCD matter at high temperature and small baryochemical potential (muB). The region from moderate to high muB is of crucial interest for the understanding of strongly interacting matter (order of the phase transition to QGP, QCD critical point,...).
Several existing or planned facilities (GSI-SIS18, CERN-SPS, FAIR, NICA, J-PARC, RHIC-BESII and fixed target) will provide collisions in an energy domain, O(10 GeV), extending our knowledge of the phase diagram towards higher densities. We will review the topics that can be studied at these facilities, with the aim of sharpening the corresponding physics programs and to investigate their complementarity. The emphasis will be on the study of dileptons, heavy-quark and quarkonium, less explored in this energy domain. The status on hadronic bulk observables, a crucial tool for the detection of critical phenomena, will also be discussed.

Speakers

Massimo **Mannarelli**, LNGS; Szymon **Harabasz**, Technische Universität Darmstadt; Christoph **Blume**, University Frankfurt am Main; Marek **Gazdzicki**, Goethe-University Frankfurt am Main/Jan Kochanowski University Kielce; Alessandro **De Falco**, Università di Cagliari; Kyoichiro **Ozawa**, KEK; Frank **Geurts**, Rice University; Itzhak **Tserruya**, Weizmann Institute of Science; Christian **Schmidt**, Bielefeld University; Volker **Koch**, Lawrebce Berkeley National Laboratory; Arno **Tripolt**, University of Graz; Joachim **Stroth**, Goethe University / GSI; Axel **Drees**, Stony Brook University; Chihiro **Sasaki**, University of Wroclaw; Sudhir **Pandurang** Rode, Joint Institute for Nuclear Research (JINR); Jan **Steinheimer- Froschauer**, Frankfurt Institute for Advanced Studies; Lijuan **Ruan**, Brookhaven National Laboratory; Olaf **Kaczmarek**, Bielefeld University; Hendrik **van Hees**, Goethe University Frankfurt; Elena **Bratkovskaya**, GSI; Santosh **Das**, Indian Institute of Technology Goa; Xin **Dong**, Lawrence Berkeley National Laboratory; Taesoo **Song**, GSI; Francesco **Prino**, INFN Torino; Min **He**, Nanjing University of Science & Technology; Anton **Andronic**, University of Muenster; Pawel **Staszel**, Jagiellonian University; Robert **Pisarski**, Brookhaven National Laboratories; Piotr **Salabura**, M. Smoluchowski, Institute of Physics; Baoyi **Chen**, Tianjin University; Roberta **Arnaldi**, INFN Torino; Michael **Strickland**, Kent State University; David **Blaschke**, University of Wroclaw; Michael **Winn**, CEA IRFU; Elena **Ferreiro**, University of Santiago de Compostela; Xiaojian **Du**, Bielefeld University; Ramona Vogt, LLNL and UC Davis; Sourendu **Gupta**, TIFR.

Organizers

Enrico **Scomparin** - INFN, Torino; Tetyana **Galatyuk** - Technical University of Darmstadt; Maria Paola **Lombardo** - INFN, Firenze; Ralf **Rapp** - Texas A&M University Cyclotron Institute; Gianluca **Usai** - Universtà di Cagliari and INFN

Director of the ECT*: Professor Gert **Aarts** | The ECT* is part of the Fondazione Bruno Kessler.

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CRC-TR 211 Strong-interaction matter under extreme conditions

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