

**Strong Interactions in the 21st century**  
**Tata Institute of Fundamental Research**  
**February 10-12**

**Venue : Lecture Theatre, Room AG 66**

**Wednesday, February 10 :**

**Registration : 8.30 –**

**Session 1 : 9.00-10.30**

Welcome (9.00-9.15) : Prof. Mustansir Barma, (Director, TIFR)

**Opening talks :**

Chair : N.D. Hari Dass

- Maria Paola Lombardo (9.15-9.45) : *Strong interactions and high baryon density: the lattice approach.*
- David Richards (9.45-10.15) : *Excited hadrons from Lattice QCD.*

**Coffee break : 10.30-11.00**

**Session 2 : 11.00-12.30**

Chair : Hiranmaya Mishra

- Noriyoshi Ishii (11.00-11.30) : *Lattice approach to nuclear forces.*
- Hirokazu Tamura (11.30-12.00) : *Nuclear and hadron physics program at J-PARC.*
- Matthew Shepherd (12.00-12.30) : *Searching for Interesting Bound States of QCD with the GlueX Experiment at Jefferson Lab.*

**Lunch : 12.30-2.00**

**Session 3 : 2.00-3.30**

Chair : Rahul Basu

- Bedangadas Mohanty (2.00-2.30) : *Study of the QCD phase diagram using high energy nuclear collisions.*
- Christian Schmidt (2.30-3.00) : *Generalized hadronic susceptibilities and critical behavior of QCD at zero and nonzero density.*
- Sourendu Gupta (3.00-3.30) : *Phase diagram of QCD.*

**Break : 3.30-4.00**

**Session 4 : 4.00-5.00**

**Institute Colloquium by David Kaplan : Nuclear Physics from QCD.**

## Programme

**Thursday, February 11 :**

**Session 5 : 9.00-10.30**

Chair : Apoorva Patel

- Rajamani Narayanan (9.00-9.30) : *Large  $N_c$  gauge theories.*
- Shailesh Chandrasekharan (9.30-10.00) : *Anomaly and the QCD critical point: a study in strongly correlated systems.*
- Gert Aarts (10.00-10.30) : *Finite density with complex Langevin dynamics.*

**Coffee break : 10.30-11.00**

**Session 6 : 11.00-12.30**

Chair : Tapan Nayak

- Christian Hoelbling (11.00-11.30) : *Ab initio determination of light hadron masses.*
- Nilmani Mathur (11.30-12.00) : *Exotics and hybrids from lattice.*
- Kamal Seth (12.00-12.30) : *Hadrons and Exotics: A renaissance in strong interaction physics.*

**Lunch : 12.30-2.00**

**Session 7 : 2.00-3.30**

Chair : Asit De

- N. D. Hari Dass (2.00-2.30) : *Super-universality in QCD strings.*
- Pushan Majumdar (2.30-3.00) : *Excited string states using the multi-level algorithm*
- Asmita Mukherjee (3.00-3.30) : *Parton distributions in position Space.*

**Coffee break : 3.30-4.00**

**Session 8 : 4.00-5.30**

Chair : Ajit Kumar Mohanty

- Michael Cheng (4.00-4.30) : *The QCD equation of state and transition at zero chemical potential.*
- Tapan Nayak (4.30-5.00) : *ALICE@LHC: Start of a new era in physics.*

**Poster Session : 5.30-6.30 at Auditorium Foyer**

**Conference Diner : 7.00-**

## Programme

**Friday, February 12 :**

**Session 9 : 9.00-10.30**

Chair : Dinesh Srivastava

- Wei Xie (9.00-9.30) : *Measurement of heavy quark production in STAR experiment at RHIC.*
- Samir Nath Mallik (9.30-10.00) : *Possibility of phase transition in nuclear matter.*
- Mikko Laine (10.00-10.30) : *Heavy quarks at finite temperature.*

**Coffee break : 10.30-11.00**

**Session 10 : 11.00-12.30**

Chair : Anju Bhasin

- B. Ananthanarayan (11.00-11.30) : *Stringent constraints on the  $\pi$   $K$  scalar form factor from chiral symmetry, analyticity and dispersion relations.*
- Paola Gianotti (11.30-12.00) : *Antiproton physics with PANDA*
- Bidyut Roy (12.00-12.30) : *PANDA detector and recent development on DIRC Cherenkov & SIPM.*

**Lunch : 12.30-1.30**

**Session 11 : 1.30-3.00**

Chair : B. Ananthanarayan

- Vladimir Kekelidze (1.30-2.00) : *Status of the NICA project at JINR.*
- R. Parthasarathy (2.00-2.30) : *Chromomagnetic vacuum and confinement.*
- Sayantan Sharma (2.30-3.00) : *Anomaly at finite density and chiral fermions on lattice.*

**Coffee break : 3.00-3.30**

**Session 12 : 3.30-5.00**

Chair : S. Ramakrishnan

- Dinesh Srivastava (3.30-4.00) : *Interference of thermal photons from relativistic heavy ion collisions.*
- Thomas Schaefer (4.00-4.30) : *Nearly perfect fluidity : From cold atomic gases to hot quark gluon plasmas.*
- David Kaplan (4.30-5.00) : *Conformality Lost*

**Conference closed (5.00PM)**

### Poster Session (Thursday 5.30-6.30 PM)

- Gauhar Abbas : *Improved bounds on the radius and curvature of the  $K$  pi scalar form factor and implications to low-energy theorems.*
- Debasish Banerjee : *Finite size effects and  $\mu$  : The  $O(2)$  non-linear sigma model.*
- Himani Bhatt : *Measurement of Transition Form Factor of eta meson through Dalitz decay  $\eta \rightarrow e^+e^-\gamma$ .*
- Abhijit Bhattacharyya : *Mesonic excitations at high temperature and density from an effective model.*
- Akbari Jahan : *Self-similarity and gluon distribution at small Bjorken- $x$ .*
- Anirban Lahiri : *QCD phase diagram from PNJL model.*
- Santunu Mondal : *Chiral Anomaly in Lattice QCD With Twisted Mass Wilson Fermion.*
- V. Srikanth : *Photon emission from out of equilibrium dissipative parton plasma.*
- Vinod Joshi : *A quasi-particle model for hot QCD and transport properties of quark-gluon plasma.*