

## ICTS Seminar

- Title** : A new nonperturbative framework and QCD
- Speaker** : Ayan Mukhopadhyay, Vienna, Tech. U.
- Date** : Tuesday, September 27, 2016
- Time** : 3:00 pm
- Venue** : Nambu Room, ICTS Campus, Bangalore
- Abstract** : An outstanding challenge for theoretical physics today is to construct an effective framework for quantum systems including nonperturbative effects. We need to understand how to include both weakly coupled partons and strongly coupled IR degrees of freedom together into a complete and consistent framework. This is relevant for QCD as lack of suitable factorization of hadronic amplitudes when momentum transfer is above the saturation scale, formation of QGP in heavy-ion collisions, collective flow in collisions of small systems and many other such experimentally accessible phenomena require us to construct such a framework for understanding them. We will propose a new framework for QCD in this direction and discuss concrete progress made towards its construction. We will argue the best context to first employ this framework will be to heavy-ion collision experiments. Finally, we will discuss a toy model where the full proposed framework can be explicitly constructed.