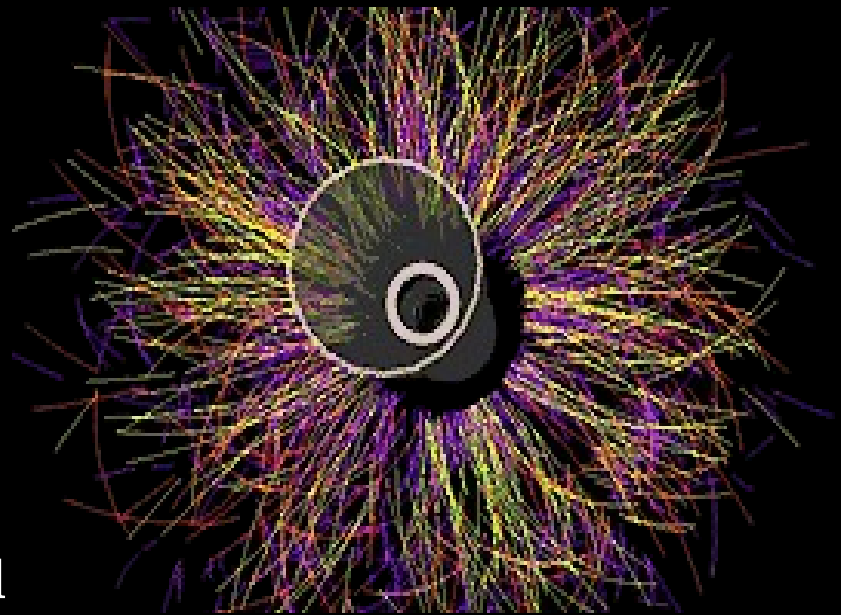




## 4th Madanlal Mehta Memorial Lecture

# The Hottest, and Most Liquid, Liquid in the Universe



**Prof. Krishna Rajagopal**  
MIT, USA

Before experiments at the Relativistic Heavy Ion Collider started recreating little droplets of the matter that filled the microseconds-old universe, this stuff was thought to be a tenuous gas-like plasma. Now we know from experiments at RHIC and at the Large Hadron Collider that at these extreme temperatures nature serves up hot quark soup --- the hottest liquid in the universe and the liquid that flows with the least dissipation. The only other comparably liquid liquid is the coldest liquid in the universe, namely the fluid made of trapped fermionic atoms at microKelvin rather than TeraKelvin temperatures. These are two examples of strongly coupled fluids without any apparent quasiparticle description. I will describe how physicists are using RHIC and LHC experiments --- as well as calculations done using dualities between liquids and black holes discovered in string theory --- to discern the properties of hot quark soup.

**Tuesday, 25th March at 4 p.m.**

**Lecture Theatre AG 66**

**TIFR, Homi Bhabha Road, Colaba, Mumbai 400005**