

# **Hot Topics in Hot Matter**

**Wednesday 17 October 2012 - Thursday 18 October 2012**

**Weizmann Institute**

## **Book of abstracts**

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## **Hot QCD Matter: Status and Prospects**

QCD matter has a complex phase structure, with a deconfined Quark-Gluon Plasma (QGP) expected to be present under conditions of extreme pressure or temperature. The hot QGP filled the universe about 10 microseconds after the Big Bang, and a high-pressure QGP may exist today in the core of neutron stars. Hot QCD matter can be generated in the laboratory via the collision of heavy atomic nuclei at high energy. Such collisions are complex, however, generating thousands of particles in the final state, and quantitative study of the QGP in such events presents unprecedented challenges for both experiment and theory. I will review recent progress in our understanding of the nature and properties of the Quark-Gluon Plasma, based on measurements from the Relativistic Heavy Ion Collider at Brookhaven and the Large Hadron Collider at CERN, together with theoretical modeling. I will also discuss some surprising connections that have emerged in recent years between study of the QGP and other areas of physics, including string theory and cold atomic gases.

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## **The RHIC and LHC Discoveries in Perspective**

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