Contribution ID: **466** Type: **Parallel contribution**

Gravitational collapse and far from equilibrium dynamics in holographic gauge theories

Thursday, 11 August 2011 10:30 (30 minutes)

In recent years holography has emerged as a powerful tool to study non-equilibrium phenomena in certain quantum theories, mapping challenging quantum dynamics onto the classical dynamics of gravitational fields in one higher dimension. One interesting process accessible with holography is the formation of a quark-gluon plasma in strongly coupled non-Abelian gauge theories. In the dual gravitational description, the formation of a quark-gluon plasma maps onto the process of gravitational collapse and black hole formation. I will describe how one can use techniques from numerical relativity to study this process.

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Session Classification: Heavy Ion Physics/Hot and Dense QCD

Track Classification: Heavy Ion Physics/Hot and Dense QCD