

Abstract for an Invited Paper  
for the APR07 Meeting of  
The American Physical Society

**Strongly coupled Quark-Gluon Plasma and its modeling via Molecular Dynamics**

EDWARD SHURYAK, Stony Brook University

The talk starts with a brief discussion of the differences between electromagnetic and Non-Abelian plasma, which include non-constant (“rotating”) color charges and magnetically charged quasiparticles - monopoles and dyons. We then summarize experimental evidences for strongly coupled regime, from RHIC experiments on heavy ion collisions. Two transport observables – the diffusion constant and viscosity – will be discussed specifically. The settings of MD simulations and its first results on these transport properties be presented as a summary. If time permits, we will also compare them to the analytical results recently obtained using string theory methods, via the so called AdS/CFT correspondence.