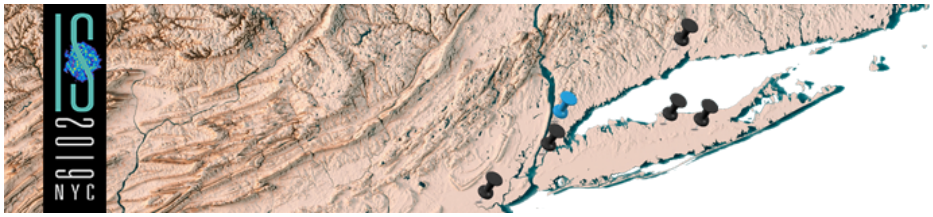

Contribution ID: **71** Type: **Oral**

Holographic collisions with baryon number at intermediate coupling

Tuesday, 25 June 2019 15:20 (20 minutes)

In holographic heavy ion collisions it is possible to follow both the energy density and a globally conserved (baryon) number density throughout the evolution, dual to a metric and Maxwell field in the dual bulk theory, respectively. At infinite coupling, past work has shown that after the collision the baryon number ends up around mid-rapidity, which is different from high energy heavy ion collisions. In this talk I will present first results for the flow of baryon number in holographic collisions away from the infinite coupling limit, which also means we study the collisions at a larger shear viscosity over entropy density ratio than $1/4\pi$. I will give an introduction to the holographic set-up, which is interesting since it contains an extra coupling of the gravitational Ricci scalar with the Maxwell field. Remarkably, depending on the value of this extra coupling, we find that the flow of baryon number during the collision can be affected drastically. In particular, we find that at intermediate coupling it is possible for almost no baryon number to end up at mid-rapidity. We further show how the matter produced in the collision relaxes into a flow as described by hydrodynamics with a conserved baryon current.

Primary authors: VAN DER SCHEE, Wilke (Utrecht University); Prof. RAJAGOPAL, Krishna (MIT); Mr FOLKESTAD, Åsmund (MIT); Dr GROZDANOV, Sašo (MIT)

Presenter: VAN DER SCHEE, Wilke (Utrecht University)

Session Classification: Parallel: Approach to Equilibrium

Track Classification: Approach to equilibrium (weak & strong coupling)