



# XXIV QUARK MATTER DARMSTADT 2014

Contribution ID: 180

Type: **Poster**

## Exact analytical solutions of second-order conformal viscous hydrodynamics

*Tuesday 20 May 2014 16:30 (2 hours)*

In this talk I will describe the recent progress towards deriving analytical solutions of 2nd order viscous conformal hydrodynamics. I will first explain the recently obtained analytical (and semi-analytical) transversally expanding solutions of 2nd order viscous conformal hydrodynamics involving the so-called boost invariant Gubser flow, which has been recently used as a powerful test regarding the precision of the existent numerical hydrodynamic codes. In the second part of the talk, I will present some new exact solutions of relativistic second-order hydrodynamic equations in theories with conformal symmetry. We construct, for the first time, fully analytical axisymmetric exact solutions of 2nd order conformal hydrodynamics including the case with nonzero vorticity. These new solutions provide a useful quantitative measure of the second-order effects in 3+1 relativistic viscous hydrodynamics.

### On behalf of collaboration:

None

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**Session Classification:** Poster session

**Track Classification:** New Theoretical Developments