UNIVERSITÄT BIELEFELD

Fakultät für Physik

Vincenzo Nugara

Università di Catania

Dynamical Attractors in 3+1D Full Boltzmann Transport: universality and length scales

The emergence of universal behaviour in early and late stages of ultra-relativistic heavy ion collisions is studied via the resolution of the Boltzmann Equation with the full collision integral by means of a transport approach. Attention is paid to the distribution function *f(x,p)* and to its momentum moments and anisotropic flows ν_n. Starting from a 0+1D conformal toy model, we will investigate more complicated systems, firstly breaking boost-invariance and conformality, towards a more realistic 3+1D non-conformal simulation exploring a wide range of setups, from small to large collision systems. We will focus on how the emergence of universality is connected to the length scales of the system, i.e. the mean free path λ_{mfp} and the transverse size *R*, and how their interplay compares with the opacity parameter $\hat{\gamma}$. Finally, the impact of initial Glasma momentum correlations on the final ν_n *(p_T)* and its dependence on the system size is analysed.

Thursday, 6 March 2025

14:15

D6-135