

## Initial State Fluctuations in Heavy Ion Collisions

*Saturday 5 November 2016 09:35 (25 minutes)*

I will review recent developments in the description of fluctuating initial conditions in heavy ion collisions. In particular I will describe the boost invariant Yang-Mills framework and the IP-Glasma model, which are valid at high collision energies.

I will describe various observables, ranging from multiplicity distributions and event-by-event distributions of anisotropic flow coefficients.

I will then discuss the extension of the model to 3 dimensions using JIMWLK renormalization group equations, which resum logarithmically enhanced quantum fluctuations. Within this framework I will present various rapidity dependent observables. Finally, I will discuss the inclusion of quantum corrections beyond the logarithmically enhanced contribution and how a fully 3+1 dimensional simulation will include plasma instabilities and possible isotropization of the non-equilibrium early-time system.

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