ID de Contribution: **16** Type: **Seminar**

Diffusion of conserved charges in relativistic heavy ion collisions

jeudi 16 septembre 2021 10:30 (30 minutes)

The bulk nuclear matter produced in heavy ion collisions carries a multitude of conserved quantum numbers: electric charge, baryon number and strangeness. Therefore, the diffusion processes associated to these conserved charges cannot occur independently and must be described in terms of a set of coupled diffusion equations. This physics is implemented by replacing the traditional diffusion coefficients for each conserved charge by a diffusion coefficient matrix, which quantifies the coupling between the conserved quantum numbers. The diagonal coefficients of this matrix are the usual charge diffusion coefficients, while the off-diagonal entries describe the diffusive coupling of the charge currents. In this seminar, we provide the first calculation of this diffusion coefficient matrix for a hadron resonance gas and a gas of partons. In order to provide some insight on the influence that the coupling between the net charge diffusion currents can have on heavy ion observables, we present first results for the diffusive evolution of a hadronic system in a simple (1+1)D-fluid dynamics approach.

Auteur principal: SILVEIRA DENICOL, Gabriel (Universidade Federal Fluminense)

Orateur: SILVEIRA DENICOL, Gabriel (Universidade Federal Fluminense)

Classification de Session: Seminars