



Contribution ID : 363

Type : Oral talk

Thermo-Electric and Magnetic effects on a self interacting scalar theory

Tuesday, 29 November 2022 16:30 (30)

We first analyze the effects of an electric field on the effective potential in a self interacting scalar theory, finding electric anticatalysis in the weak field region, i.e. a critical temperature that diminishes as function of the intensity of the electric field. The physical situation corresponds to collision between heavy and a light nuclei, for example Au-Cu collision, where due to the imbalance in the number of protons in the initial state, a strong electric field in the plane of the collision appears. In a second step we consider the effects of an electric and a magnetic field, perpendicular to each other again in the scenario of a self interacting scalar theory. In this case, we have inverse magnetic-electric catalysis (IMEC), where both fields cooperate in the diminishing behavior of the critical temperature. We present also some results concerning the mass evolution.

Primary author(s) : LOEWE, Marcelo (Pontificia Universidad Catolica de Chile)

Presenter(s) : LOEWE, Marcelo (Pontificia Universidad Catolica de Chile)

Session Classification : Plenary

Track Classification : Heavy ion physics