AIRTON DEPPMAN Instituto de Física, USP

Título: Emergence of non-extensive processes in QCD via fractal structures

Resumo:

The non-extensivity of the multiparticle production process at high energy collisions evidenced the non-extensive behaviour of the mechanisms involved in the strong interaction. The value for the parameter q can be calculated, for QCD, in terms of the number of colours and number of flavours. The theoretical result agrees with the result obtained in experimental data analysis. The generalization of Hagedorn's thermodynamics with the inclusion of the non-additive statistics leads to a new formula for the hadron mass spectrum that fits the observed data better than the original Hagedorn formula. This indicates that the hadron structure may also present a fractal structure, and in this regard, preliminary results on the phenomenology of z-scaling will be presented.