

TSALLIS-PARETO DISTRIBUTION IN HEAVY ION COLLISIONS. AN INTRODUCTION

G. Barnafoldi

*Research Institute for Particle and Nuclear Physics, MTA KFKI RMKI,
Budapest, Hungary*

Non-extensive thermodynamics is a novel approach in the field of high energy physics. The low and intermediate transverse momentum spectra are extremely well reproduced by a Tsallis - Pareto distribution. However, the derivation of the Tsallis parameter is still an unsolved question. Understanding hadronization processes in heavy-ion collisions requires more detailed tests, especially at high transverse momenta, where we are far from the thermal equilibrium state.

In this talk I am introducing the non-extensive thermodynamics and derive the Tsallis-Pareto distribution. A short review on various application is also given from various fields.