

Fractal spaces and Tsallis Statistics

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Recent results have revealed interesting relationships between fractals or multifractals with Tsallis Statistics. The entropic parameter, denoted as q , can be linked to relevant fractal properties. Although this research initially emerged in the context of High-Energy Physics, it has wide-ranging applications. Notably, the dynamic evolution of a system within fractal spaces has been thoroughly investigated. It was initially demonstrated that the Boltzmann Equation for a system with non-local correlations leads to a non-linear dynamic equation known as the Plastio-Plastino Equation. Subsequently, it was shown that the fractal derivative version of the Fokker-Planck Equation also results in the Plastio-Plastino Equation. In this context, the significant parameters of the fractal space can be correlated with the entropic index, particularly the so-called fractal dimension gap. These findings have practical applications in the study of the dynamics of a heavy-quark within a medium.