## The Probability Foundation of Fundamental Theoretical Physics

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**Abstract :** In the study of the logical foundations of probability theory, it was found that the terms and equations of the fundamental theoretical physics represent terms and theorems of the classical probability theory, more precisely, of that part of this theory, which considers the probability of dot events in the 3 + 1 space-time. In particular, the masses, moments, energies, spins, etc. turn out of parameters of probability distributions such events. The terms and the equations of the electroweak and of the quark-gluon theories turn out the theoretical-probabilistic terms and theorems. Here the relation of a neutrino to his lepton becomes clear, the W and Z bosons masses turn out dynamic ones, the cause of the asymmetry between particles and antiparticles is the impossibility of the birth of single antiparticles. In addition, phenomena such as confinement and asymptotic freedom receive their probabilistic explanation. And here we have the logical foundations of the gravity theory with phenomena dark energy and dark matter.

**Keywords :** classical theory of probability, logical foundation of fundamental theoretical physics, masses, moments, energies, spins

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