

A New and Simplified Explanation for the Existence of Universal Constants

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Energy variations essentially represent changes on both macroscopic and microscopic scales. Since the total mass of the universe remains constant, the masses of fundamental particles—such as electrons, protons, and neutrons—are also unchanging. Furthermore, as the universe operates as a closed system, the total energy within specific systems, such as on Earth, remains constant. This is consistent with the principle of conservation of mass and energy, a universally accepted and unchanging principle. Hence, the total mass and energy within the universe are always constant.

In each solar system, planetary system, or galaxy, the total amount of energy and matter remains unchanged. However, energy variations within these systems arise from changes in mass, motion, or vibrations. While some transformations occur between mass and energy, the closed nature of the system and the invariance of microscopic and macroscopic parameters—such as the masses of electrons, protons, and neutrons—ensure that certain ratios remain consistent. In essence, these masses are relative and exhibit ratios that challenge and uphold the constancy of the total mass.

These constant ratios represent the relationship between the upper and lower bounds of variations, effectively forming the universal constants. Because the microscopic and macroscopic parameters of the system remain unchanged, universal constants also persist as unchanging values.

Result:

The basis of variation is rooted in changes to energy and velocity. Since the masses of particles, from the smallest to the largest, remain constant, the average ratio of energy variations also remains constant. This constancy supports the existence of universal constants, characterized by fixed values.

