

Postulates Introduced by Periodic Physics

Principle of Time

With respect to the variant-rate time the speed of light in vacuum is a directionally periodic function of the w -coordinate.

Principle of Gravitational Mass

The gravitational mass of physical substance is an invariant quantity; its magnitude is proportional to the time-symmetric rest-mass. The sign of antimatter's gravitational mass is opposite to the sign of matter's gravitational mass; the total gravitational mass of the universe is zero.

Principle of Difference

Macro gravitation differs from length-dependent electricity in all respects.

Second Principle of Equivalence

Exclusively for photons/antiphotons and only in the reference frame of their absorbing substance the time-asymmetric gravitational field is equivalent to a conservative field.

Principle of Cosmic Odyssey

Most of the non-virtual photons in empty space eventually return to their emitting systems in converging superpositions that are evenly distributed over the whole solid angle.

Third Principle of Equivalence

The spectrum of odyssey-radiation is equivalent to the spectrum of black-body radiation.

Principle of Supreme Design

The universe is supremely designed, inspected, and controlled, such that at any epoch there are numerous solar systems which host life and numerous solar systems at recycling processes preparing to host life.

Principle of Cosmological Pair

The whole universe is constituted of two interchangeably orthogonal universes.

Principle of Internal Mode

The independent variable on which the internal influence on a participant depends is its variable charge. Inside a composite quark/lepton the participants are its fundamental constituents; inside a quark-composed particle/leptonic-shell the participants are its quarks/leptons; inside an atom/ion the participants are its nucleus and its leptonic-shell.

Reformulated Postulates

Principle of Time-Symmetric Mechanics

The derivative of the momentum of a particle with respect to the invariant-rate time is proportional to the time-symmetric description of the force exerted on it.

Principle of Time-Asymmetric Mechanics

The derivative of the momentum of a particle with respect to the variant-rate time is proportional to the time-asymmetric description of the force exerted on it.

Principle of Time-Symmetric Relativity

The relativity of physical quantities is due to the invariance of the mathematical principles of Nature and due to the invariance of its universal constants.

Principle of Time-Asymmetric Relativity

The relativity of physical quantities is due to the invariance of the mathematical principles of Nature, due to the invariance of its universal constants, and due to its fundamental variant.

Principle of Space

With respect to the invariant-rate time the speed of light in vacuum is a universal constant.

First Principle of Equivalence

Free fall of a purely-matter system or of a purely-antimatter system in a uniformly operated gravitational field is infinitesimally equivalent to uniform motion in a hypothetical universe free of gravitation; stationary state of a purely-matter system or of a purely-antimatter system in a uniformly operated gravitational field is infinitesimally equivalent to uniform acceleration in a hypothetical universe free of gravitation.

Time-Asymmetric Second Law of Thermodynamics

The entropy of a closed cosmological system¹ gradually increases during the decrease of the variant speed of light; and rapidly decreases during the increase of the variant speed of light. Due to controlled gravitation and conversion of physical substance to its orthogonal form, no gravitational collapse ends up in infinite entropy. The total entropy of a closed cosmological system always lies within a certain finite interval.

¹ All the members of a closed cosmological system experience the same variant speed of light.