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Space, Time, and Matter in Cosmology

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Abstract

White holes produce new questions in cosmology. The Big Bang theory (BB) presumes space-time continuum with unidirectional concept of time, while the bidirectional concept of time only emerges regarding white holes. The article argues for the multidimensionality of time differentiated from space in its conceptual contexts in the SI definition. The argument takes the method in the physical formation of white holes from nuclear caloric curve in relation to its gravitational properties. White holes' physical properties imply the concept of time is relative, and time and space do not necessarily belong in a same continuous dimension. The physical existence of white holes falsifies the BB by the hot and cold BB with the nuclear caloric curve.

Keywords: Cosmology; Relativistic cosmology; Gravitational singularities; Time series analysis; Primordial black holes

Introduction

White holes negate the concept of time being associated with space. Space-time continuum is accustomed to ascribe and describe the movement of matter. Cosmic evolution, either in symmetric or asymmetric presumptions, followed suit with space-time continuation with the Big Bang theory (BB). Unidirectionality of time exists with conscious experience of life forms, but only bidirectional when it comes to inanimate objects Hall [1]. White holes being the time reversal of black holes comes to the edge of continuous presumptions of space and time in its four dimensional descriptions, vertex spaces supplement white hole studies in the BB framework.

White holes do not necessarily negate space, but the presumptions of space in cosmology [2]. With the linearity of cosmic time, it was proposed that white holes created small bangs to correlate the initial thermonuclear conditions in the BB framework. However, the BB itself avoided the question of space in cosmology. The expansion and contraction in the BB do not represent the expansion or contraction of space. Since the whole of space is simultaneous in time, current theories only seek the corrective solution from the event itself or to replicate the event across space, making it pluralistic inherently or externally to compensate for the bidirectionality of time concept [3].

The research proposes a dimensionality of time that the concept of time is relative. Time cannot be perceived or measured without the change or movement of matter, and the conceptual development of time is closely associated with the solar movement. The proposition gives statistical values to time in relation to a singularity space [4]. The experimental method hypothesizes white hole

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surface to be caused by its nuclear repulsive force surpassing its gravitational force [5]. The hypothesis is incompletely evidenced by NGC 3034's neutron asymmetry in proton decay momentum, and the analysis explores its relations to nuclear caloric curve.

Method

The pressure-dependent elasticity of nuclear attractive force can function with the source-dependent nuclear caloric curve for white hole crystallization. The sub-Fermi theorization is best characterized by non-Newtonian liquids [6]. The experiment of McIntosh *et al.* evidenced the quasi-projectile higher temperature in neutron poor sources, i.e. nuclear attractive force stronger than the strong interaction is present in the nuclear caloric curve [7]. Alberti and Chavanis (2020) further studied into the gravitational catastrophe (thermal runaway), indicating 2 that with enough pressure for spatial confinement, the maximum energy of caloric curve underlies black body radiation [1].

Black body radiation in the BB framework is often interpreted as black hole evaporation. The asymptotic momentum in general relativistic effects between white hole and black hole was depicted as gravitational collapse with the heat induced value thresholds of the Coulomb force, but the suppression of particles with higher spin (e.g. gravitons) in Schwarzschild black holes indicates otherwise [8]. Fermi surface wrapping provides the physical basis for counteracting Coulomb repulsion in proton-rich concentrates, with reduced perturbation in metallic systems. Therefore, black body radiation is evidence for white hole nuclear dynamics instead of black hole evaporation [9].

The compression on white hole crystallization indicates to the fifth cosmic force. The early descriptions of white holes have been located as "relativistic collision less star clusters" with the energy variable x [10]:

$$x \equiv 13.25\left(\frac{\frac{E}{M}-1+Z_c}{Z_c}\right) \tag{1}$$

Its redshift function plot Z_c with fractional binding energy corressponds to the ground state effective mass tendency in excitation energy, and the maximum redshift $Z_c \rightarrow \infty$ was theorized to reach stability [11]. Since the hot and cold double spiral in caloric curve depends on the isothermal context, their convergence in high particle number in the gas parameter $v = \frac{GNm}{Rc^2}$ can be re-conceptualized in terms of energy [12]:

$$v = \frac{GNm_1m_2}{RE} \tag{2}$$

Its stable state does not necessarily need to take gas forms, and the parameter's relations to Newtonian gravity with regard to the white hole in question become:

$$v = \frac{Fr^2N}{RE} \tag{3}$$

The inverse correlation between particle number and v_{max} becomes the prerequisite of white hole formation. Inductively, the fifth cosmic force needs to be in place for the asymptotic momentum of protons for the internal centrifugal sorting for the Fermi surface to form, with the baryon asymmetry in proton decay [13,14].

Results

From the nuclear caloric curve, it can be inferred that the physical properties of white holes are possible, and its parameters in the SI definition of time may create negative numerical values. The matter occupation of space by white holes does not conflict with its gravitation and nuclear repulsive properties. The existence of white holes imply that time is relative in the SI definition of time.

White hole gravitation in the nuclear caloric curve falsifies the BB both on hot and cold BB. The cosmic forces determine time dilation and matter occupation of space, which is the fundamental basis of the BB. The hot and cold spirals of the nuclear caloric curve may be a key to the explanatory paradigms of life formation and sustainment, both on the inherent and environmental factors cosmically.

Higher order of the fifth cosmic force may provide further insights into the dimensionality of cosmology, and exotic matter forms. Dark matter and dark energy are not observed nor detected possibly by the locking effects of white holes. Therein lays the threshold of our current cosmological knowledge.

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