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New Experimental Support to Santilli's Mechanism of IsoRedShift (IRS) in "Heavy Ions and Dust Free" Medium

Sanjay J. Dhoble

*Department of Physics, R. T. M. Nagpur University, Nagpur-440033, India
Email: sjdhoble@rediffmail.com*

Abstract. In this paper I am direly discuss the tonditions of experiment in space in the present of dense cloud and time of sunset as well as all experiential shoot out very small time is very typical, therefore, we are consider this experiment is new, typical and supportive it's results to Santilli's IsoRedShift at the time of sunrise and sunset. In this paper first time support the Santilli's 1991 hypothesis of the anomalous IsoRedShift (IRS) with help of sunrise at above cloud in the heavy ions and dust free medium may be loss of energy of light due at same place possibility of scattering is more less due to absence of heavy ions and dust free medium. This typical new experiment support the Santilli's comprehensive experimental confirmations the absorption of light in the heavy ions and dust free medium for IsoRedShift at the time of sunrise and may be time of sunset.

Keywords: Redshift; Blueshift; Astrophysics; loss of energy;
PACS: 92.60.Vb

INTRODUCTION

The color of the Sun observed from the space outside the Earth's atmosphere is white because of the superposition of different wavelengths. In 1991 Santilli proposed a hypothesis asserting that, when light propagates through the large quasar chromospheres, it experiences a loss of energy with consequential redshift and, as a result, the quasar light reaches empty space already redshifted [1]. Also he offered a quantitative illustration of the colors of the atmosphere exclusive of any relative motions between the medium, the source, and the observer that leads to Isoredshift, with divergence from the structure of the Minkowski spacetime for the vacuum. The phenomenon of the redshift has produced diverse explanations that led to diagrammatically opposing conjectures in the fields of astrophysics and cosmology. For example, whether our universe is expanding or pulsating or stationary. The observed redshift is usually explained through the Doppler Effect, as it tells us that the wavelength of electromagnetic radiation is shifted as a result of the source moving away from, or coming towards, the observer. In the case of redshift the populist proposal is that its origin lies in the postulated expansion of the universe. The effect due to the relative movement is duly recognized but as far as special relativistic effects are concerned the usual expressions have to be modified for high speeds. On the other hand the general theory of relativity also produces gravitational redshift but there is a debate over whether or not to accept it as an explanation of observed redshift [2]. Moreover, the traversing of light through the cosmos causes that light to lose energy in its journey and this is an observed fact, which has been explained by Prof. Santilli as IRS and IBS. The idea of tired light, the concept that light by some means loses energy in its journey through the cosmos, came into being as an alternative explanation for representations which encompassed an expanding universe suggested that, as the light lost energy, it became redshifted. Theoretical assertions and experimental verifications of Isoredshift on the basis of hypothesis submitted by Santilli [1,2] according to which the redness of "direct" Sunlight at Sunrise/Sunset is due to the IsoRedShift is (IRS) based on the loss of energy $E = h\nu$ by light to air at low temperature without any relative motion between the source, the air and the observer.

Anderson reported the experimental confirmation by independent European and American scientists of Santilli's IsoRedShift and IsoBlueShift in the propagation of light within transparent physical media, which were predicted by Santilli in 1978 when at Harvard University under DOE support, treated in numerous subsequent works, and first experimentally verified in 2010 (among a vast literature, see: Ref. [1] of 1983 on the first covering of the Lorentz symmetry for physical media; monograph [2] of 1991 on the first systematic presentation; paper [3] of 2010 on the first experimental verification; five monographs [4] of 2008 on a comprehensive technical review; proceedings [5] of 2011 on the recent Nepal Conference for an update; monograph [6] for an independent review and series [7] for web-lectures in the field). We are referring to: Isoshift (IS) consisting

of a shift of the frequency of light when propagating within a transparent physical medium without any relative motion between the source, the medium and the detector, thus establishing the inapplicability of Einstein special relativity within physical media. Prof. Santilli has established in 50 years at the mathematical, theoretical and experimental levels. The prediction and data elaboration are based on the novel isomathematics with related isosymmetries, isomechanics, and isorelativity for physical media, where the prefix ``iso`` is used in its Greek meaning of characterizing "axiom-preserving" liftings of 20th century formulations. In particular, we have, isoRedShift (IRS) occurring when the transparent physical medium is at a sufficiently low temperature to assume all atoms as essentially being in their ground state. In this case, the Lorentz-Poincare'-Santilli (lp[s]) isosymmetry shows that the energy needed for the interaction is supplied by light $E = h\nu \Rightarrow E' = h\nu' < E$, with evident isoshift toward the red $\nu' < \nu$, out of a vast material, we show below the Testing Station and an example of IRS.

NEW EXPERIMENTAL SUPPORT FOR SANTILLI'S ISOREDSHIFT

As far as intergalactic space is concerned, Santilli proposed the innovative concept that a medium with high energy density is first and foremost described by light, with minor contributions from hydrogen, dust and cosmic rays. He intended that one can see the intact universe from any point in intergalactic space, consequently implying that light originating from the entire universe crosses every point despite the position of the observer. Santilli then eliminated the concept of expansion of the universe by his theoretical and experimental confirmations that light propagating within the physical medium experiences a redshift without any relative motion. Moreover, Santilli has forwarded his theory for experimental confirmation, juxtaposing the historically existing controversies. The increase of the redness of the Sun at Sunset that is noticeable to the human eye can be ascribed to the increasing traversing of Sunlight in air. It is assumed as evidence on the absence of acceleration of the expansion of the universe with the increase of the distance from Earth. As is well known, Sunlight at the apex is mainly yellow but at Sunset it is red. This redness increases with the increase of the distance traveled by light in the atmosphere; that is, with the decrease of the height of the Sun over the horizon without any noticeable relative motion between the Sun and the Earth. During Sunrise we have the inverse transition from the redness of the Sun to a yellow color at the Zenith. The transition from yellow to red implies an anomalous shift. Furthermore, Santilli pointed out that the predominance of red color at Sunset and Sunrise occurs for direct sunlight and interpreted as blue light being absorbed by our atmosphere at Sunset and Sunrise and consequential conversion to red [5].

Generally, air pressure and density decreases with altitude in the atmosphere but temperature may remain relatively constant or even increase with altitude in some regions. This temperature behaviour provides a useful metric to distinguish between atmospheric layers. On the basis of this, Earth's atmosphere can be divided into five main layers. Such as: Troposphere, Stratosphere, Mesosphere, Thermosphere, Exosphere.

Troposphere-The layer of the atmosphere closest to the earth is the troposphere. It begins at the surface of the earth and extends out to about 4-12 miles and contains half of the earth's atmosphere. The temperature of the troposphere decreases with height.

Stratosphere-This is the second-lowest layer of earth atmosphere, which extends to about 30-35 miles above the earth surface. Temperature of this layer increases by the absorption of UV radiation from the sun by the ozone in this layer. The stratospheric temperature profile creates very stable atmospheric condition.

Mesosphere-The mesosphere is the third highest layer of earth's atmosphere, occupying the region above the stratosphere and below the thermosphere (35 to 50 miles). Temperature drops with increasing altitude to the mesopause that marks the top of this middle layer of the atmosphere and is the coldest place on earth.

Thermosphere-It is the second highest layers of earth's atmosphere. It extends from the mesopause at an altitude of about 80km showing a gradual increase in temperature with height. The temperature of this layer can rise as high as 1500°C.

Exosphere-The exosphere is the outermost layer of earth's atmosphere (i.e, upper limit of atmosphere) this layer composed of extremely low densities of hydrogen, helium, and several heavier molecules including nitrogen, oxygen and carbon-dioxide is closer to exobase.

In this paper we have concentrated on precise experimental verifications in dust free atmosphere the sunlight at the time of sunrise pass through the dust and heavy ions free atmosphere during source and observer both are moving conditions, the sunlight is observed in red region (Isoredshift) of the spectrum above cloud in open atmosphere. Under my precise experimental verifications is in "dust and heavy ions free" atmosphere at the time of sunrise. The sunlight passes through the dust and heavy ions free atmosphere and that time the source is moving and observer (observer in aeroplane) also in moving condition. The sunlight is observed in red region (Isoredshift) of the spectrum above clouds in open atmosphere. On the basis of Santilli's mechanism of IRS due to loss of energy,

sunlight is converted to red color of the spectrum. While, according to previous literatures, before Santilli's mechanism of IRS, the light get converted into red region due to scattering of light in the medium containing the dust particles, heavy ions, the sources which help in scattering of light i.e. electromagnetic waves. It was strongly mentioned that, due to scattering the light is converted into red region. Santilli explained these IRS at the time of sunrise or sunset only due to the energy loss of light and the light is shifted to lower energy side i.e. in the red region of the spectrum[8,9]. In open space above the clouds neither dust particles nor heavy mass particles are present (more than 25,000 Feet from Earth surface), so there is no question of scattering by dust particles or heavy mass particles. Only possibility is that, some of the lower mass particles are present at this height and scattering of light is very less as compared to earth surface or ground level. Hence, above the dense clouds level IRS observed at Sunrise is due to loss of energy of sunlight and not by scattering. This dust free and heavy ions free medium experiment supports Santilli's mechanism of IRS.

On the basis of Santilli's mechanism of IRS is due to loss of energy of light and convert to red color of the spectrum. While, previous literature before Santilli's mechanism of IRS of is mentioned the light shows in red region due to scattering of light in the medium contain the dust particles[10,11], heavy ions and sources are help to scattering of light means electromagnetic waves and it is converted red region only and strongly mentioned by scattering of light. Santilli's explain these IRS at the time of sunrise or sunset due to only loss of energy of light and shifted to lower energy side means in the red region of the spectrum. Above cloud in open space neither dust particle nor heavy mass particles at this height more than 25,000 Feet, so there is no questions of scattering by dust particle nor heavy mass particles[12]. Only possible some of lower mass particles are present at this height and for scattering of light it quantity of capacity of scattering is very less as compared to earth level or ground level. This dust free medium experiment may be support to Santilli's mechanism of IRS. Therefore, I concluded here on the basic of dust and heavy ions free particles[13].

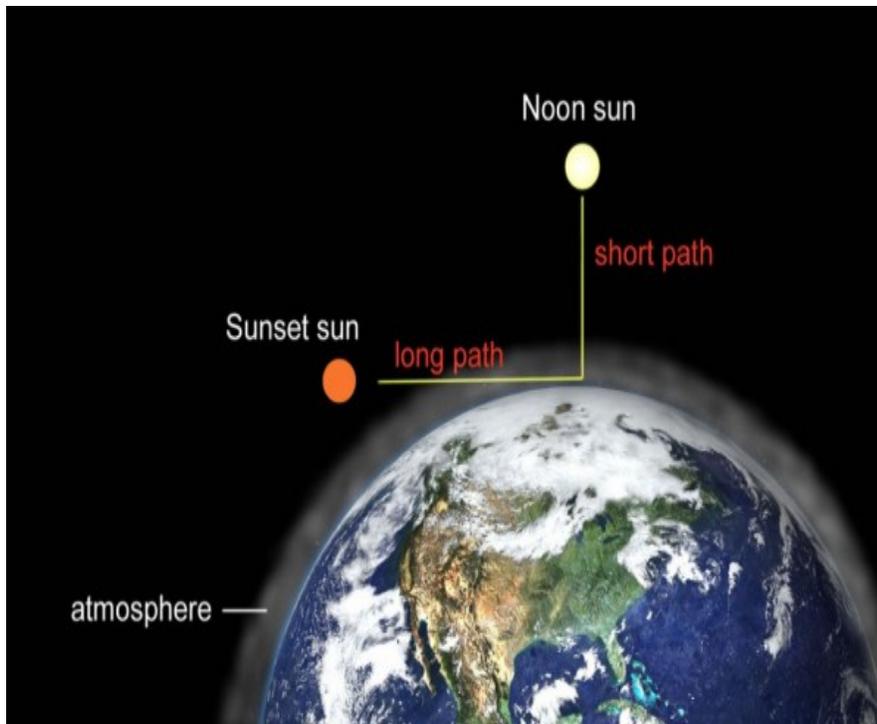


FIGURE 1. Earth and atmosphere around the earth.



FIGURE 2. Experimental photograph during sunrise at above dense cloud

CONCLUSIONS

Santilli's comprehensive experimental confirmations the absorption of light in a transparent medium is proportional to the wavelength of electromagnetic radiations. The above evidence confirms Santilli's argument that the redness of the atmosphere at Sunset is an associated sign of the IRS. Consequently the explanation in terms of scattering causing redshift is realised theoretically and experimentally. Finally, I conclude that IRS observed at the time of sunrise at above cloud in the heavy ions and dust free medium may be loss of energy of light due at same place possibility of scattering is more less due to absence of heavy ions and dust free medium. This typical new experiment support the Santilli's comprehensive experimental confirmations the absorption of light in the heavy ions and dust free medium for IsoRedShift at the time of sunrise and may be time of sunset.

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