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The Wave Nature Phenomena and the Gravitational Field

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ABSTRACT

We are familiar with wave – water wave in pond, river, sea, sound wave in the air, the light wave, the infrared wave comes from the sun to the earth. Water waves arise for the disruption in the area of water. In the air, sound waves occur for some disorder. The gravitational field is surrounded everywhere in the universe. Light waves, infrared waves, radio waves are the cause of disruption in the gravitational field. Surges of seawater bear more power than river water because of the density of sea water-heavy than river water. Light waves and others of the sun carries more force than earth because the gravitational field intensity of the sun is higher than the ground. In this paper, we will study the cause of why the nature phenomena of waves such as light disturbs in the gravitational field.

Keywords: Gravitational Field, Intensity, Wave

INTRODUCTION

We are familiar with visible light, infrared heat, X-rays, microwaves, and more. By receiving these type of waves from the sun to the earth, then we are able to detect and feel the heat and light. Now here the question arises, how and where light wave, infrared wave and others play. In fact, all the particles and small matter in the universe, which are immersed in the gravitational field, disrupt the movement of these small particles in the gravitational field. More precisely, a wave is a disturbance that propagates, or moves from the place it has created. For water waves, the disturbance is in the surface of the water, perhaps created by a rock thrown into a pond or by a swimmer splashing the surface repeatedly. For sound waves, the disturbance is a change in air pressure, perhaps created by the oscillating cone inside a speaker. For earthquakes, there are several types of disturbances, including disturbance of Earth's surface and pressure disturbances under the surface. Even radio waves easily understood using an analogy with water waves. Visualizing water waves is useful because there is more to it than just a mental image.

Water waves exhibit characteristics common to all waves, such as amplitude, period, frequency and energy. All wave characteristics can described by a small set of underlying principles. Each wave holds some water that represents the force of the water wave. The length and height, i.e. the range along a wave, represent the force (weight of the rock) at the same time. If a harder rock has a weight that throws force into the water, it exceeds the height (range) of the wave. In this way, it can say that the amplitude of a wave is directly different from the force. On the other hand, force decreases and wavelength gains. A wave in seawater bears more energy than river water because density that is field intensity is higher than river water. Every wave carries some power. Ocean waves exert some force on the outer surface of a log and log go ahead (Palchoudhury, 2016). Any wave characterized by wavelength and amplitude. Without wavelengths, waves are impossible. Without amplitude, a wave will not unlikely. On a large scale, we need to consider the speed, frequency per second, and intensity of the gravitational field to explain the behaviour of the wave.

BEHAVIOUR OF WAVE IN THE GRAVITATIONAL FIELD

Today it is a piece of common knowledge, according to gravitational Newton's law all objects in the universe, are attracted to each other. It is also a general knowledge that all matter of immerses in the gravitational field that attracts to each other. This gravitational field intensity is higher nearest to a body. Accordingly, the gravitational field intensity depends on the mass of objects. The gravitational field is flexible because a piece of stone drops in this field and cools down like water in a pond. When a tiny particle moves or trembles disturbs in this gravitational field and a wave at once along with wavelength and amplitude, i.e. height arises like waves in a pond and spread everywhere in the gravitational field. Some force requires disturbing the pond water by dropping a stone with force. Similarly, to create a wave in this gravitational field, some energy requires moving or tremble the tiny particles that come from atomic power in the sun. Furthermore, all wave bears some force to travel here and there. The burning sun is the primary source of energy of the solar system. The gravitational field intensity of the sun is higher than the earth. To create a wave in the gravitational field of the sun more power is essential than the surface because the gravitational field intensity of the sun is higher than the earth compares to heavy ocean water and light river water. When a wave reaches the ground from the sun, then the power of the wave changes because the field intensity of the earth is less than the sum. There is no zero gravitational field intensity area in the universe. A neutral space exists between two bodies. Such as the earth and the moon border area, but there exists some gravitational field intensity. Moreover, the wave passes through this neutral area on the basis field intensity. The following Fig 1 shows the amplitude and wavelength.

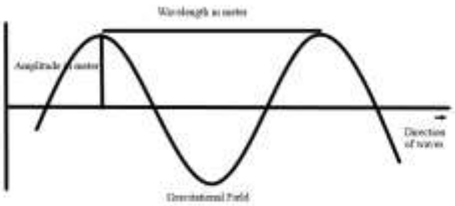

Fig 1. The wavelength and amplitude of a wave.

According to the frame of the Earth gravitational field the intensity is 9.798, we may express the following for the unit wave. The force of a wave is directly proportional with the amplitude of a wave and gravitational field intensity and is inversely proportional with the wavelength. We have,

$$F \propto A \tag{1}$$

$$F \propto \frac{1}{\lambda} \tag{2}$$

$$F \propto i \tag{3}$$

and therefore we have,

$$F = ki\frac{A}{\lambda} \tag{4}$$

Here, F is the force, k, is constant of proportionality, i is the gravitational field intensity, A is amplitude of a wave and λ is the wavelength. All parameters expressed in SI unit and therefore a wave can take the force per second as below.

$$P \ = Ff \tag{5}$$

Here, P, defined the gravitational force in Newton per second and f is the frequency per second and in Hz. In comparative may consider the earth's gravitational field intensity as, $i = 9.798\ m/s$ as an approved platform and primary data of red colour shown in the Table1. By using data these values, for, $F = 6.64 \times 10^{-34}$, $A = 2.42 \times 10^{-7}$, $\lambda = 6.86 \times 10^{-7}$, $i = 9.798$ in Equation 4, we may measure the value of $k = 1.9199 \times 10^{-34}$ as constant of proportionality. In this paper, we have used the above and following phrases in all tables, as below: The gravitational field Intensity i of the Earth as 9.798, the velocity of various waves as $V = \lambda f$, and the velocity of light in meter as $V = 299792458$ m/s. The forces of various waves per second in the Earth can be as $P \ = Ff$. The ratio between local area field intensity and earth field intensity is R and $R = i/9.798$. The local area gravitational field intensity i for Sun can be 274 and the Moon is 1.62. For Mercury it is 3.7, Venus is 8.87, Jupiter 24.92 source NASA. The value of R for Sun is 27.965, Moon is 1.65×10^{-1}, Mercury 3.78×10^{-1}, Venus 9.05×10^{-1} and for Jupiter is 2.543. Local area force retain by different waves per second as P (Earth) R. Following primary data of wavelength range of various waves collected from the http://ncert.nic.in/NCERTS/l/leph108.pdf.

Red (625–740), Orange (590-625), Yellow (565-590), Green (500-565), Blue (450-485), Violet (380-450) nm, Infrared wave (750 nm–1 mm), Radio wave (1 m–100 km), Microwave (1 mm-1 m), Ultraviolet wave (10-400 nm), X-ray wave (0.01-10 nm). Moreover, all data convert in Length, Electron volt to Newton meter, and Energy use in the following tables.

Table 1. Different waves and related forces

Various Waves	About unit wave			Statistics per second		
	λ	**A**	**F**	**f**	**V**	**P**
Red	6.86E-07	2.42E-07	6.64E-34	4.37E+14	3.00E+08	2.90E-19
Orange	6.10E-07	2.15E-07	6.62E-34	4.91E+14	3.00E+08	3.25E-19
Yellow	5.80E-07	2.05E-07	6.64E-34	5.16E+14	2.99E+08	3.43E-19
Green	5.47E-07	1.93E-07	6.64E-34	5.48E+14	3.00E+08	3.64E-19
Blue	4.78E-07	1.68E-07	6.62E-34	6.27E+14	3.00E+08	4.15E-19
Violet	4.27E-07	1.50E-07	6.63E-34	7.01E+14	2.99E+08	4.64E-19
Near Infrared	9.60E-07	3.38E-07	6.62E-34	3.12E+14	3.00E+08	2.07E-19
Short Wave length IR	2.00E-06	7.04E-07	6.63E-34	1.5E+14	3.00E+08	9.93E-20
Mid Wave length IR	5.00E-06	1.76E-06	6.63E-34	6.00E+13	3.00E+08	3.97E-20
Long Wave length IR	1.20E-05	4.23E-06	6.62E-34	2.5E+13	3.00E+08	1.66E-20
Far Infrared IR	2.00E-04	7.05E-05	6.63E-34	1.50E+12	3.00E+08	9.93E-22
Radio	1.50E+02	5.29E+1	6.63E-34	2.00E+06	3.00E+08	1.33E-27
Microwave	5.00E-02	1.76E-02	6.63E-34	6.00E+09	3.00E+08	3.97E-24
Ultra violate - A	3.80E-07	1.34E-07	6.63E-34	7.89E+14	3.00E+08	5.23E-19
Ultra violate – B	3.00E-07	1.06E-07	6.63E-34	9.99E+14	3.00E+08	6.62E-19
Ultra violate - C	1.60E-07	5.64E-08	6.63E-34	1.87E+15	3.00E+08	1.24E-18
X-ray	1.00E-09	3.52E-10	6.63E-34	3.00E+17	3.00E+08	1.99E-16

$$k = 1.9199 \times 10^{-34}, \quad i = 9.798, \quad F = \frac{kiA}{\lambda}, V = \lambda f, \quad P = Ff$$

Table 2. Various Waves and its local area force per second

Various Waves	Local area force retains by different waves per second = $P(Earth) \times R$					
	P at earth	**Sun**	**Moon**	**Mercury**	**Venus**	**Jupiter**
Red	2.90E-19	8.11E-18	4.79E-20	1.10E-19	2.63E-19	7.38E-19
Orange	3.25E-19	9.10E-18	5.38E-20	1.23E-19	2.94E-19	8.27E-19
Yellow	3.43E-19	9.59E-18	5.67E-20	1.29E-19	3.10E-19	8.72E-19
Green	3.64E-19	1.02E-17	6.01E-20	1.37E-19	3.29E-19	9.25E-19
Blue	4.15E-19	1.16E-17	6.86E-20	1.57E-19	3.76E-19	1.06E-18
Violet	4.64E-19	1.30E-17	7.68E-20	1.75E-19	4.21E-19	1.18E-18
Near Infrared	2.07E-19	5.78E-18	3.42E-20	7.80E-20	1.87E-19	5.26E-19
Short Wave length IR	9.93E-20	2.78E-18	1.64E-20	3.75E-20	8.99E-20	2.53E-19
Mid Wave length IR	3.97E-20	1.11E-18	6.57E-21	1.50E-20	3.60E-20	1.01E-19
Long Wave length IR	1.66E-20	4.63E-19	2.74E-21	6.25E-21	1.50E-20	4.21E-20
Far Infrared IR	9.93E-22	2.78E-20	1.64E-22	3.75E-22	8.99E-22	2.53E-21
Radio	1.33E-27	3.71E-26	2.19E-28	5.00E-28	1.20E-27	3.37E-27
Microwave	3.97E-24	1.11E-22	6.57E-25	1.50E-24	3.60E-24	1.01E-23
Ultra violate - A	5.23E-19	1.46E-17	8.64E-20	1.97E-19	4.73E-19	1.33E-18
Ultra violate – B	6.62E-19	1.85E-17	1.09E-19	2.50E-19	5.99E-19	1.68E-18
Ultra violate - C	1.24E-18	3.47E-17	2.05E-19	4.69E-19	1.12E-18	3.16E-18
X-ray	1.99E-16	5.56E-15	3.28E-17	7.50E-17	1.80E-16	5.05E-16

The value of P from the Table 1, and the values of R for $Sun = 27.965$, $Moon = 1.65 \times 10^{-1}$, $Mercury = 3.78 \times 10^{-1}$, $Venus = 9.05 \times 10^{-1}$, $Jupiter = 2.543$. Statics of wave of unit colour

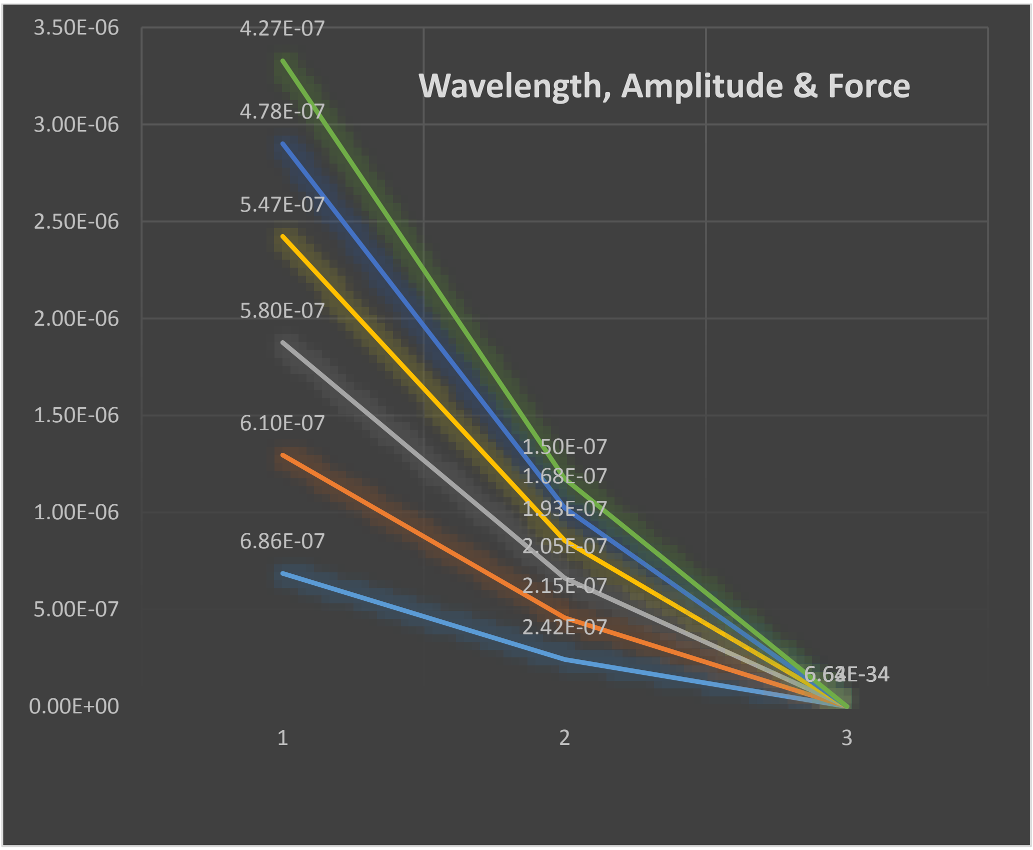

Fig 2. The figure shows different wavelengths, amplitudes and forces for different colour waves. 1= (λ), 2= (A), 3= (F)

The gravitational field intensity is variable with the distance from the centre of gravity of a body. Gravitational field intensity of a body is a component of Palchoudhury Wave Theory. Hence, we can predict, a wave may follow in a curve path to retain the status quo coming from a distant star. Again, a wave may change (shift) into another form of a wave to adjust with field intensity coming from a distant star.

CONCLUSION

The gravitational field exists everywhere in this universe. All kind wave phenomena like the visible light wave; the infrared wave is the result of the disturbance in the gravitational field. In addition, this is the Palchoudhury Wave Theory. Power of a wave differs on the variation of gravitational field intensity of different area. Power of a wave in the sun is higher than the earth for the reason gravitational field intensity of the sun is higher than the earth. We can detect the mass of celestial bodies by the Palchoudhury wave theory because gravitational field intensity is a factor of the argument. Palchoudhury wave theory is self-explanatory all kind of wave. Moreover, have scope for further extensive work.

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