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Matter and energy in a non-relativistic approach amongst the mustard seed and the "faith". A metaphysical conclusion.

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Abstract
The work is the result of a philosophical study of several passages of the *Holy Bible*, with regard to faith. We analyzed verses that include mustard seed parables. The study discusses the various concepts of faith as belief and faith as a form of energy. In this concept of faith as energy, we made a connection and this matter. We approach the gravitational field using the Law of Universal Gravitation and the equation of equivalence between energy and matter not to relativistic effects. Of Scriptures, we focus on Matthew 17:20, and according to the concept of faith as a form of energy, we calculate the energy needed to raise a mountain, for the conversion of matter to energy in a mustard seed and we compare a massive iron mountain, Mount Everest and Mount Sinai. We conclude with these concepts and considerations that energy "faith" can move a mountain.

Keywords
Energy, Faith, Holy Bible, Matter, Mustard Seed, Power.

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Contents

Introduction

The work is an approach to the Bible passages, those that include mustard seed parables and the equation equivalence of matter and energy. We analyze the philosophical concept of faith and energy. We focus on two parables of the Holy Bible, Matthew 17:20 and Luke 17:6. Do not we direct in the religious character of the sacred scriptures, but philosophical interpretation of one of the most read books and published by humanity. Analyzed: the equation $E = mc^2$ and its non-relativistic implications, the mustard plant and its seed; Great mountains like Mount Everest and Mount Sinai, their altitude, size, geological structure of its rocks, formation, density; The gravitational potential energy and the law of universal gravitation; and the speed of light through the Maxwell equations.

1. Mustard plant

Mustards are several plants of genus Brassica and Sinapis whose seeds are used as spice and that after ground and mixed with water, vinegar and other liquids become known as the condiment mustard. Mustard seeds can also be used to obtain mustard oil, and the sheets are usually edible. Besides the mustard, the brassicas also includes cabbage, rapeseed and

Figure 1. Mustard cultivation in Bangladesh. [1]

turnips The seeds can also be pressed to make mustard oil, and the edible leaves can be eaten as mustard greens. [1]

Mustard seeds are the small round seeds of various mustard plants. The seeds are usually about 1 or 2 mm in diameter. Mustard seeds may be colored from yellowish white to black. They are important herbs in many regional foods. The seeds can come from three different plants: black mustard (*Brassica nigra*), brown Indian mustard (*Brassica juncea*), and white mustard (*Brassica hirta/Sinapis alba*)

In the New Testament of the Judeo-Christian Bible, the mustard seed is used by Jesus in the parable of the mustard seed as a model for the kingdom of God which initially starts small, but grows to be the biggest of all garden plants. Faith is also spoken about in the context of a mustard seed. [2]

The earliest reference to mustard is in India from a story of Gautama Buddha in the fifth century BC. Gautama Buddha told the story of the grieving mother (Kisa Gotami) and the mustard seed. When a mother loses her only son, she takes his body to the Buddha to find a cure. The Buddha asks her to bring a handful of mustard seeds from a family that has never lost a child, husband, parent, or friend. When the mother is unable to find such a house in her village, she realizes death is common to all, and she cannot be selfish in her grief. [3, 4] The *Buddha* stated that if an individual were to pick a single mustard seed every hundred years from a seven-mile cube worth of mustard seeds, then by the time the last seed is picked, the age of the world cycle would still continue. (If a mustard seed is 3 mm in diameter, then taking one seed every 100 years from a seven-mile cube of seeds, would take 936 quintillion years, 68 billion times the age of the universe.)

Jewish texts compare the knowable universe to the size of a mustard seed to demonstrate the world's insignificance and to teach humility. [5] The Jewish philosopher *Nahmanides* mentions the universe expanded from the time of its creation, in which it was the size of a mustard seed. [1, 6]

1.1 How much does a mustard seed have of mass?

A green mustard seed weighs approximately 0.002 g. [7] There are two challenges in determining the size of a single mustard seed. First of all, mustard seeds vary in weight from seed to seed. Secondly, green mustard seeds are smaller than brown mustard seeds. You did not specify which one you desired the weight of. I selected the smaller green mustard seed. Based on the combined weight of 1000 green mustard seeds, an average single green mustard seed should weigh: 0.002 g; 0.000 070 548 ounce; 0.000 004 409 lb; 0.2 cg; 0.000 002 kg 0.001 128 767 dram; 0.030 864 717 grain; 2 000 μg; 2 mg. [7]

Seed lots of yellow mustard differed in green seed content (range = 0-1.8%), 1000 seed weight (5.22-9.46 g). [8] Seed lots of brown and oriental mustard differed in green seed content, 1,000 seed weight (2.17-3.58 g). [9]

Estimated number of vegetable seeds by ounce or gram of mustard is 9,900-17,000 seeds per ounce or 350-600 seeds per gram, therefore each seed is 1,667-2.857 mg. [10]

2. Mustard parables in the Holy Bible

Mark 4:30
(The Parable of the Mustard Seed) Again he said, "What shall we say the kingdom of God is like, or what parable shall we use to describe it?" [2]

Mark 4:31
"It is like a mustard seed, which is the smallest of all seeds on earth". [2]

Luke 13:18 (The Parables of the Mustard Seed and the Yeast)Then Jesus asked, "What is the kingdom of God like? What shall I compare it to?" [2]

Luke 13:19
"It is like a mustard seed, which a man took and planted in his garden. It grew and became a tree, and the birds perched in its branches." [2]

Luke 17:6
He replied, "If you have faith as small as a mustard seed, you can say to this mulberry tree, 'Be uprooted and planted in the sea,' and it will obey you". [2]

Matthew 13:31
(The Parables of the Mustard Seed and the Yeast) He told them another parable: "The kingdom of heaven is like a mustard seed, which a man took and planted in his field". [2]

Matthew 17:20
He replied, "Because you have so little faith. Truly I tell you, if you have faith as small as a mustard seed, you can say to this mountain, 'Move from here to there,' and it will move. Nothing will be impossible for you." [2]

Figure 2. Mount Everest, also known in Nepal as *Sagarmatha* and in Tibet as Chomolungma, is Earth's highest mountain. It is located in the Mahalangur section of the Himalayas. Its peak is 8,848 metres (29,029 ft) above sea level. [11]

Figure 3. Mount Sinai is a legendary place that also known as Mount Moses. [12] This is a sacred place for several religions. The location of Mount Sinai is in Sinai Peninsula, Egypt. In the Jewish, Christian and Islamic religious, they believe it as the location where Moses received Ten Commandments. It was mentioned several times in the Book of Exodus, Bible and Al-Quran. Mount Sinai is about 2,285 meters of height on the high mountain. Its location is near Saint Catherine city in Sinai region. The location is just next to Mount Catherine and surrounded by the higher peaks of mountain. [13]

3. Mountains

3.1 Mount Everest

Mount Everest, also known in Nepal as Sagarmãthã and in Tibet as Chomolungma, is Earth's highest mountain. It is located in the Mahalangur section of the Himalayas. Its peak is 8,848 metres (29,029 ft) above sea level. [14] It is not the furthest summit from the centre of the Earth. That honour goes to Mount Chimborazo, in the Andes. [15] The international border between China and Nepal runs across Everest's precise summit point. Its massif includes neighbouring peaks Lhotse, 8,516 m (27,940 ft); Nuptse, 7,855 m (25,771 ft) and Changtse, 7,580 m (24,870 ft). [1]

In 1856, the Great Trigonometrical Survey of India established the first published height of Everest, then known as Peak XV, at 29,002 ft (8,840 m). The current official height of 8,848 m (29,029 ft) as recognised by China and Nepal was established by a 1955 Indian survey and subsequently confirmed by a Chinese survey in 1975. In 1865, Everest was given its official English name by the Royal Geographical Society upon a recommendation by Andrew Waugh, the British Surveyor General of India. Waugh named the mountain after his predecessor in the post, Sir George Everest, arguing that there were many local names, against the opinion of Everest. [16]

Geologists have subdivided the rocks comprising Mount Everest into three units called "formations" [17, 18]. Each formation is separated from the other by low-angle faults, called "detachments", along which they have been thrust southward over each other. From the summit of Mount Everest to its base these rock units are the Qomolangma Formation, the North Col Formation, and the Rongbuk Formation. [17, 18, 19]

Mount Everest consists of sedimentary and metamorphic rocks that have been faulted southward over continental crust composed of Archean granulites of the Indian Plate during the Cenozoic collision of India with Asia. Current interpretations argue that the Qomolangma and North Col formations consist of marine sediments that accumulated within the continental shelf of the northern, passive continental margin of India prior to its collision with Asia. The Cenozoic collision of India with Asia subsequently deformed and metamorphosed these strata as it thrust them southward and upward [20, 21]. The Rongbuk Formation consists of a sequence of high-grade metamorphic and granitic rocks that were derived from the alteration of high-grade metasedimentary rocks. During the collision of India with Asia, these rocks were thrust downward and to the north as they were overridden by other strata; heated, metamorphosed, and partially melted at depths of over 15 to 20 km (9.3 to 12.4 mi) below sea level; and then forced upward to surface by thrusting towards the south between two major detachments. [22, 23]

3.2 Mount Sinai

Mount Sinai, "Moses' Mountain" or "Mount Moses". Har Sinai, also known as Mount Horeb, is a mountain in the Sinai Peninsula of Egypt that is a possible location of the biblical Mount Sinai, 28°32'23"N 33°58'24"E. The latter is mentioned many times in the Book of Exodus and other books of the Bible [24], and the Al-Quran. [25] According to Jewish, Christian, and Islamic tradition, the biblical Mount Sinai was the place where Moses received the Ten Commandments. [1]

Mount Sinai is a 2,285 m (7,497 ft) moderately high mountain near the city of Saint Catherine in the Sinai region. It is next to Mount Catherine (at 2,629 m or 8,625 ft, the highest peak in Egypt). [26, 27] It is surrounded on all sides by higher peaks of the mountain range.

Mount Sinai's rocks were formed in the late stage of the Arabian-Nubian Shield's (ANS) evolution. Mount Sinai displays a ring complex [28] that consists of alkaline granites intruded into diverse rock types, including volcanics. The granites range in composition from syenogranite to alkali feldspar granite. The volcanic rocks are alkaline to peralkaline and they are represented by subaerial flows and eruptions and subvolcanic porphyry. Generally, the nature of the exposed rocks in Mount Sinai indicates that they originated from different depths. [1, 26]

Big siesmic activity and the tremendous eruptive phenomena have given Sinai its characteristic looks. The highest mountains are the Gebel Musa (Moses' mountain) with 2,285 metres, and the Sinai's highest mountain Mount St. Catherine (Gebel Kathrina) with 2,642 metres. Many of the Pharaohs got their precious stones from the southern Sinai. [26]

The biblical Mount Sinai is one of the most important sacred places in the Jewish and Christian and Islamic religions. According to Bedouin tradition, it was the mountain where God gave laws to the Israelites. However, the earliest Christian traditions place this event at the nearby Mount Serbal, at the foot of which a monastery was founded in the 4th century; it was only in the 6th century that the monastery moved to the foot of Mount Catherine, following the guidance of Josephus's earlier claim that Sinai was the highest mountain in the area. [1] Christians settled upon this mountain in the third century AD. Georgians from the Caucasus moved to the Sinai Peninsula in the Fifth Century, and a Georgian colony was formed there in the Ninth Century. Georgians erected their own churches in the area of the modern Mount Sinai. The construction of one such church was connected with the name of David The Builder, who contributed to the erecting of churches in Georgia and abroad as well. There were political, cultural and religious motives for locating the church on Mount Sinai. Georgian monks living there were deeply connected with their motherland. The church had its own plots[clarification needed] in Kartli. Some of the Georgian manuscripts of Sinai remain there, but others are kept in Tbilisi, St. Petersburg, Prague, New York, Paris, or in private collections. [1]

4. Fundamentals of Physical

4.1 Potential-Energy Functions

Since the work done by a conservative force on a particle does not depend on the path, it depend only on the endpoints initial and final. We can use this property to define the *potential-energy function U* that is associated with a conservative force. Note that when the skier skis down the hill, the work done by gravity *decreases* the potential energy of the system. In general, we define the potential energy function such that the work done by a conservative force equals the decrease in the potentialenergy function: [29, 30]

$$W = \int \bar{F} \,.\vec{ds} = -\Delta U \tag{1}$$

Integrating, we obtain Gravitational potential energy near the earth's surface:

$$U = \int mg\,dy = mgy + U_o \tag{2}$$

$$U = U_o + mgy \tag{3}$$

where $\mathbf{U}_0$, the arbitrary constant of integration, is the value of the potential energy at y = 0. Since only a change in the potential energy is defined, the actual value of U is not important. We are free to choose U to be zero at any convenient reference point. For example, if the gravitational potential energy of the earth–skier system is chosen to be zero when the skier is at the bottom of the hill, its value when the skier is at a height h above that level is mgh. Or we could choose the potential energy to be zero when the skier is at sea level, in which case its value at any other point would be mgy, where y is measured from sea level. [29, 30]

4.2 Newton's Law of Gravity

Although Kepler's laws were an important first step in understanding the motion of planets, they were still just empirical rules obtained from the astronomical observations of Brahe. It remained for Newton to take the next giant step by attributing the acceleration of a planet in its orbit to a specific force exerted on it by the sun. Newton proved that a force that varies inversely with the square of the distance between the sun and a planet results in elliptical orbits, as observed by Kepler. He then made the bold assumption that this force acts between any two objects in the universe. Before Newton, it was not even generally accepted that the laws of physics observed on earth were applicable to the heavenly bodies. Newton's law of gravity postulates that there is a force ofattraction between each pair of objects that is proportional to the product of the masses of the objects and inversely proportional to the square of the distance separating them. The magnitude of the gravitational force exerted by a particle of mass m_1 on another particle of mass m_2 a distance r away is thus given by

$$F = \frac{G.m_1 m_2}{r^2} \tag{4}$$

where G is the universal gravitational constant, which has the value

$$G = 6.67x10^{-11} Nm^2/kg^2 \tag{5}$$

Newton published his theory of gravitation in 1686, but it was not until a century later that an accurate experimental determination of G was made by Cavendish, whose findings will be discussed in the next section. If m_1 is at position $\vec{r}_1$ and m_2 is at $\vec{r}_2$, the force exerted by mass m_1 on m_2 is

$$\bar{F}_{1,2} = \frac{G.m_1 m_2}{r_{1,2}^3}\,\hat{r}_{1,2} \tag{6}$$

where $\vec{r}_{1,2}$ is the vector pointing from mass m_1 to m_2 and $\bar{r}_{1,2}$=$\vec{r}_{1,2}$/r$_{1,2}$ is a unit vector point from m_1 to m_2. The force exerted by m_2 on m_1 is the negative of , according to Newton's third law. We can use the known value of G to compute the gravitational attraction between two ordinary objects. [29, 30]

4.3 Gravitational Potential Energy

Near the surface of the earth, the gravitational force exerted by the earth on an object is constant because the distance to the center of the earth $r = R_E + h$ is always approximately R_E for $h \ll R_E$. The potential energy of an object near the earth's surface is $mg(r - R_E) = mgh$, where we have chosen $U = 0$ at the earth's surface, $r = R_E$. When we are far from the surface of the earth, we must take into account the fact that the gravitational force exerted by the earth is not uniform but decreases as 1/r^2. The general definition of potential energy gives

$$dU = -\bar{F} \cdot \vec{ds} \tag{7}$$

where is the force on a particle and is a general displacement of the particle. For the radial gravitational force given by we have

$$dU = -\bar{F} \cdot \vec{ds} = -F_r dr = -\left(-\frac{GM_E m}{r^2}\right) dr$$

$$= +\frac{GM_E m}{r^2} dr \tag{8}$$

Integrating both sides of this equation we obtain

$$U = -\frac{GM_E m}{r} + U_0 \tag{9}$$

where U_0 is a constant of integration. Since only changes in potential energy are important, we can choose the potential energy to be zero at any position. The earth's surface is a good choice for many everyday problems, but it is not always a convenient choice. For example, when considering the potential energy associated with a planet and the sun, there is no reason to want the potential energy to be zero at the surface of the sun. In fact, it is nearly always more convenient to choose the gravitational potential energy of a two-object system to be zero when the separation of the objects is infinite. Thus, U_0 is often a convenient choice. Then Gravitational potential energy with $U = 0$ at infinite separation is

$$U(r) = -\frac{GMm}{r}, \quad U = 0 \ at \ r = \infty \tag{10}$$

[29, 30]

4.4 Gravity model for Earth

The type of gravity model used for the Earth depends upon the degree of fidelity required for a given problem. For many problems such as aircraft simulation, it may be sufficient to consider gravity to be a constant, defined as: [31]

$$g = 9.80665m(32.1740ft)/s^2 \tag{11}$$

based upon data from World Geodetic System 1984 (WGS-84) [32], where g is understood to be pointing 'down' in the local frame of reference.

If it is desirable to model an object's weight on Earth as a function of latitude, one could use the following [31]:

$$g = g_{45} - \tfrac{1}{2}(g_{\text{poles}} - g_{\text{equator}}) \cos\left(2\,lat\,\frac{\pi}{180}\right) \tag{12}$$

where

$$g_{\text{poles}} = 9.832m(32.26ft)/s^2 \tag{13}$$

$$g_{45} = 9.806m(32.17ft)/s^2 \tag{14}$$

$$g_{\text{equator}} = 9.780m(32.09ft)/s^2 \tag{15}$$

lat = latitude, between -90° and 90°.

The *Earth Gravitational Model 1996* (EGM96) contains 130,676 coefficients that refine the model of the Earth's gravitational field. The most significant correction term is about two orders of magnitude more significant than the next largest term. [31] That coefficient is referred to as the J_2 term, and accounts for the flattening of the poles, or the oblateness, of the Earth. (A shape elongated on its axis-of-symmetry, like an American football, would be called prolate.) A gravitational potential function can be written for the change in potential energy for a unit mass that is brought from infinity into proximity to the Earth. Taking partial derivatives of that function with respect to a coordinate system will then resolve the directional components of the gravitational acceleration vector, as a function of location. The component due to the Earth's rotation can then be included, if appropriate, based on a sidereal day relative to the stars (≈366.24 days/year) rather than on a solar day (≈365.24 days/year). That component is perpendicular to the axis of rotation rather than to the surface of the Earth.

A similar model adjusted for the geometry and gravitational field for Mars can be found in publication NASA SP-8010. [33]

The barycentric gravitational acceleration at a point in space is given by:

$$\mathbf{g} = -\frac{GM}{r^2}\hat{\mathbf{r}} \tag{16}$$

where:

M is the mass of the attracting object, $\vec{r}$ is the unit vector from center-of-mass of the attracting object to the center-of-mass of the object being accelerated, r is the distance between the two objects, and G is the gravitational constant.

When this calculation is done for objects on the surface of the Earth, or aircraft that rotate with the Earth, one has to account that the Earth is rotating and the centrifugal acceleration has to be subtracted from this. For example, the equation above gives the acceleration at 9.820 m/s^2, when GM = 3.986×10^{14} m^2/s^2, and R = 6.371×10^6 m. The centripetal radius is $r = R$ cos(latitude), and the centripetal time unit is approximately (day / 2/*pi*), reduces this, for $r = 5\times10^6$ metres, to 9.79379 m/s^2, which is closer to the observed value. [29, 30]

5. Speed light and Electromagnetism

The speed of light in vacuum, commonly denoted c, is a universal physical constant important in many areas of physics. Its value is 299,792,458 metres per second, $\approx 3.00\cdot10^8 m/s$, as the length of the metre is defined from this constant and the international standard for time. [34] According to special relativity, c is the maximum speed at which all matter and information in the universe can travel. It is the speed at which all massless particles and changes of the associated fields (including electromagnetic radiation such as light and gravitational waves) travel in vacuum. Such particles and waves travel at c regardless of the motion of the source or the inertial reference frame of the observer. In the theory of relativity, c interrelates space and time, and also appears in the famous equation of mass–energy equivalence, Eq. (27), $E = mc^2$. [29, 30, 35]

By solving Maxwell's equations [30, 29, 36] in a vacuum and no field sources it is possible to obtain the speed of an electromagnetic wave. Follows the procedure:

$$\nabla\cdot\mathbf{E} = 0 \tag{17}$$

$$\nabla\cdot\mathbf{B} = 0 \tag{18}$$

$$\nabla\times\mathbf{E} = -\frac{\partial\mathbf{B}}{\partial t} \tag{19}$$

$$\nabla\times\mathbf{B} = \mu_0\varepsilon_0\frac{\partial\mathbf{E}}{\partial t} \tag{20}$$

These equations have a simple solution in terms of plane progressive sinusoidal waves with the directions of the electric and magnetic fields orthogonal to each other and to the direction of travel, and the two fields in phase:

$$\nabla\times\nabla\times\mathbf{E} = \nabla(\nabla\cdot\mathbf{E}) - \nabla^2\mathbf{E}$$

$$= \nabla\times\left(-\frac{\partial\mathbf{B}}{\partial t}\right) = -\frac{\partial(\nabla\times\mathbf{B})}{\partial t} \tag{21}$$

$$\nabla\times\nabla\times\mathbf{B} = \nabla(\nabla\cdot\mathbf{B}) - \nabla^2\mathbf{B}$$

$$= \nabla\times\left(\mu_0\varepsilon_0\frac{\partial\mathbf{E}}{\partial t}\right) = \mu_0\varepsilon_0\frac{\partial\nabla\times\mathbf{E}}{\partial t} \tag{22}$$

but:

$$0 - \nabla^2\mathbf{E} = -\frac{\partial}{\partial t}\left(\mu_0\varepsilon_0\frac{\partial\mathbf{E}}{\partial t}\right) 0 - \nabla^2\mathbf{B}$$

$$= \mu_0\varepsilon_0\frac{\partial}{\partial t}\left(-\frac{\partial\mathbf{B}}{\partial t}\right) \tag{23}$$

This allows to obtain the equation of electromagnetic wave:

$$\nabla^2\mathbf{E} = \mu_0\varepsilon_0\frac{\partial^2\mathbf{E}}{\partial t^2} \tag{24}$$

$$\nabla^2\mathbf{B} = \mu_0\varepsilon_0\frac{\partial^2\mathbf{B}}{\partial t^2} \tag{25}$$

Where you obtain the speed of electromagnetic wave (c):

$$c = \frac{1}{\sqrt{\mu_0\varepsilon_0}} \tag{26}$$

In 1865 Maxwell wrote:

"This speed is so close to the speed of light that it seems we have strong reason to conclude that light itself (including radiant heat, and other radiations if any) is an electromagnetic disturbance in the form of waves propagated through the electromagnetic field according to electromagnetic laws." [29, 30, 36]

6. Mass-energy equivalence

In physics, mass–energy equivalence is the concept that the mass of an object or system is a measure of its energy content. For instance, adding 25 kWh (90 MJ) of any form of energy to any object increases its mass by 1 μg (and, accordingly, its inertia and weight) even though no matter has been added.

Figure 4. *Triumph of Faith over Idolatry*, by Jean-Baptiste Théodon (French, 1646–1713). Church of the Gesù, Rome, Italy. [1]

A physical system has a property called energy and a corresponding property called mass; the two properties are equivalent in that they are always both present in the same (i.e. constant) proportion to one another. Mass–energy equivalence arose originally from special relativity as a paradox described by Henri Poincaré. [37] The equivalence of energy E and mass m is reliant on the speed of light c and is described by the famous equation:

$$E = mc^2 \tag{27}$$

Thus, this mass–energy relation states that the universal proportionality factor between equivalent amounts of energy and mass is equal to the speed of light squared. This also serves to convert units of mass to units of energy, no matter what system of measurement units used.
[29, 30]

7. The concept of faith

Faith is confidence or trust in a person or thing or a belief not based on proof. It may also refer to a particular system of religious belief. [38] The term *faith* has numerous connotations and is used in many different ways, often depending on context.

7.1 Meaning of faith christian

The word translated as *faith* in the New Testament is the Greek word $\pi\acute{\iota}\sigma\tau\iota\varsigma$ which can also be translated "belief" or "trust". [39]

Faith within Christianity is based on the work and teachings of Jesus Christ. [40] Christianity declares itself not to be distinguished by faith, but by the object of its faith. Rather than being passive, faith leads to an active life aligned with the ideals and the example of the life of Jesus. The Christian sees the mystery of God and his grace and seeks to know and become obedient to God. To a Christian, faith is not static but causes one to learn more of God and to grow; Christian faith has its origin in God. [41]

In Christianity, faith causes change as it seeks a greater understanding of God. Faith is not fideism or simple obedience to a set of rules or statements. [42] Before Christians have faith, they must understand in whom and in what they have faith. Without understanding, there cannot be true faith, and that understanding is built on the foundation of the community of believers, the scriptures and traditions and on the personal experiences of the believer. [43] In English translations of the New Testament, the word "faith" generally corresponds to the Greek (pistis) or to the Greek (pisteuo), meaning "to trust, to have confidence, faithfulness, to be reliable, to assure". [44, 45]

Faith in Christianity is a central notion taught by Jesus himself in reference to the Good News. [2] In the understanding of Jesus it was an act of trust and self-abandonment in which people no longer rely on their own strength and policies but commit themselves to the power and guiding word of him in whom they believe. [2] Since the Protestant Reformation the meaning of this term has been an object of major theological disagreement in Western Christianity. The differences have been largely overcome in the Joint Declaration on the Doctrine of Justification (1999). Some of the definitions in the history of Christian theology have followed the biblical formulation in Hebrews 11:1: "the assurance of things hoped for, the conviction of things not seen". [46] As in other Abrahamic religions, it includes a belief in the existence of God, in the reality of a transcendent domain that God administers as his kingdom and in the benevolence of the will of God or God's plan for humankind. [44, 45]

Christianity differs from other Abrahamic religions in that it focuses on the teachings of Jesus, and on his place as the prophesied Christ. It also includes a belief in the New Covenant. According to most Christian traditions, Christian faith requires a belief in Jesus' resurrection from the dead by God the Father through The Holy Spirit. The precise understanding of the term "faith" differs among the various Christian traditions. Despite these differences, Christians generally agree that faith in Jesus lies at the core of the Christian tradition, and that such faith is required in order to be a Christian. [45]

The essential element in Christian faith, however, is God's

descent towards his creatures, particularly towards the humblest, those who are weakest and least gifted according to the values of the "world". There are spiritual techniques which it is useful to learn, but God is able to by-pass them or do without them. A Christian's "method of getting closer to God is not based on any technique in the strict sense of the word. That would contradict the spirit of childhood called for by the Gospel. The heart of genuine Christian mysticism is not technique: it is always a gift of God; and the one who benefits from it knows himself to be unworthy". [47]

7.2 Concepts of other religions

In the Bahá'í Faith, faith is meant, first, conscious knowledge, and second, the practice of good deeds,[6] ultimately the acceptance of the divine authority of the Manifestations of God. In the religion's view, faith and knowledge are both required for spiritual growth. Faith involves more than outward obedience to this authority, but also must be based on a deep personal understanding of religious teachings. [48]

In Buddhism *Faith* is an important constituent element of the teachings of Gautama Buddha in both the Theravada and the Mahayana traditions. The teachings of Buddha were originally recorded in the language Pali and the word saddhã is generally translated as "faith". In the teachings, saddhã is often described as: a conviction that something is; a determination to accomplish one's goals and a sense of joy deriving from the other two. While faith in Buddhism does not imply "blind faith", Buddhist practice nevertheless requires a degree of trust, primarily in the spiritual attainment of Gautama Buddha. Faith in Buddhism centers on the understanding that the Buddha is an Awakened being, on his superior role as teacher, in the truth of his Dharma (spiritual teachings), and in his Sangha (community of spiritually developed followers). Faith in Buddhism can be summarised as faith in the Three Jewels: the Buddha, Dharma and Sangha. It is intended to lead to the goal of enlightenment, or bodhi, and Nirvana. Volitionally, faith implies a resolute and courageous act of will. It combines the steadfast resolution that one will do a thing with the self-confidence that one can do it. [49]

In Hinduism, Ahimsa also referred to as non violence is the fundamental tenet of Hinduism which advocates harmonious and peaceful co existence and evolutionary growth in grace and wisdom for all humankind unconditionally. Most of the Vedic prayers begins with the chants of Om. Om is the Sanskrit symbol that amazingly resonates the peacefulness ensconced within one's higher self. Om is considered to have a profound effect on the body and mind of the one who chants and also creates a calmness, serenity, healing, strength of its own to prevail within and also in the surrounding environment. [1]

In Islam, a believer's faith in the metaphysical aspects of Islam is called "Iman", which is complete submission to the will of God, not unquestionable or blind belief. [50, 51] A man must build his faith on well-grounded convictions beyond any reasonable doubt and above uncertainty. According to the Quran, Iman must be accompanied by righteous deeds and the two together are necessary for entry into Paradise. [52] In the Hadith of Gabriel, Iman in addition to Islam and Ihsan form the three dimensions of the Islamic religion. [1]

In Judaism, Faith itself is not a religious concept in Judaism. The only one time faith in God is mentioned in the 24 books of the Jewish Bible, is in verse 10 of the Book of Isaiah, Chapter 43. In this verse, the commandment to know God is followed by the commandments to believe and to understand, thus denoting descending importance. [53]

In Sikhism, Faith itself is not a religious concept in Sikhism. However, the five Sikh symbols, known as Kakaars or Five Ks (in Punjabi known as pañj kakke or pañj kakar), are sometimes referred to as the Five articles of Faith. [54]

7.3 "Energy medicine"

Energy medicine, energy therapy, energy healing, or spiritual healing are branches of alternative medicine. The most controversial claim in this general area of pseudoscience is the belief healers can channel healing energy into a patient and effect positive results. This idea itself contains several methods: hands-on, [55] hands-off, [55] and distant [55, 56] (or absent) where the patient and healer are in different locations.

Many schools of energy healing exist using many names, for example, biofield energy healing, [57, 58] spiritual healing, [59] contact healing, distant healing, therapeutic touch, [60] Reiki, [61] or Qigong. [57]

Spiritual healing occurs largely in non-denominational and ecumenical contexts. Practitioners do not see traditional religious faith as a prerequisite for effecting cures. Faith healing, by contrast, takes place within a traditional religious context. [62]

While early reviews of the scientific literature on energy healing were equivocal and recommended further research [63, 64], more recent reviews have concluded that there is no evidence supporting clinical efficacy. [65, 66, 67, 68, 69, 70] The theoretical basis of healing has been criticised as implausible [71, 72, 73, 74], research and reviews supportive of energy medicine have been faulted for containing methodological flaws [75, 76, 77] and selection bias and positive therapeutic results have been dismissed as resulting from known psychological mechanisms. [75, 76]

The term "energy medicine" has been in general use since the founding of the non-profit International Society for the Study of Subtle Energies and Energy Medicine in the 1980s. Guides are available for practitioners, and other books aim to provide a theoretical basis and evidence for the practice. Energy medicine often proposes that imbalances in the body's "energy field" result in illness, and that by re-balancing the body's energy-field health can be restored. Some modalities describe treatments as ridding the body of negative energies or blockages in 'mind'; illness or episodes of ill health after a treatment are referred to as a 'release' or letting go of a 'contraction' in the body-mind. Usually, a practitioner will

then recommend further treatments for complete healing. [78]

The US-based National Center for Complementary and Integrative Health (NCCIH) distinguishes between health care involving scientifically observable energy, which it calls "Veritable Energy Medicine", and health care methods that invoke physically undetectable or unverifiable "energies", which it calls "Putative Energy Medicine". [78]

Types of "veritable energy medicine" include magnet therapy, colorpuncture, and light therapy. Medical techniques involving the use electromagnetic radiation (e.g. radiation therapy or magnetic resonance imaging) are not considered "energy medicine" in the terms of alternative medicine.

Types of "putative energy medicine" include biofield energy healing therapies where the hands are used to direct or modulate "energies" which are believed to effect healing in the patient; this includes spiritual healing and psychic healing, Therapeutic touch, Healing Touch, Esoteric healing, Magnetic healing (now a historical term not to be confused with magnet therapy), Qigong healing, Reiki, Pranic healing, Crystal healing, distant healing, intercessory prayer, and similar modalities. [79, 80] Concepts such as Qi (*Chi*), Prana, Innate Intelligence, Mana, Pneuma, Vital fluid, Odic force, and Orgone are among the many terms that have been used to describe these putative energy fields. This category does not include Acupuncture, Ayurvedic medicine, Chiropractic, and other modalities where a physical intervention is used to manipulate a putative energy. [80]

8. Methods and calculations

Which the mass energy of a mustard seed, assuming that the entire mass is converted into energy?

Considering the faith as a form of energy, which energy - by Matthew 17:20-21, [2] the weight of a mustard seed? By Einstein's equation, [29, 30, 81] Eq. (28), matter is converted into energy and vice versa.

Whereas the mass of a mustard seed ranging from 1.667 - 9.460 mg [7, 8, 9, 10, 82] and the speed of light, c = 299,792,458 m/s, compute E for Eq. (28):

for m = 1.667 mg

$$E \approx 1.498.10^{11}\,J \tag{28}$$

for m = 9.460 mg

$$E \approx 8.502.10^{11}\,J \tag{29}$$

Therefore, the energy of a mustard seed varies between $E \approx 1.498.10^{11}\,J$ - $\approx 8.502.10^{11}\,J$, respectively.

We now know how much it is the whole mass of the converted into energy mustard seed. According to the parable of the Holy Bible, [2] the question is what the mountain size that can raise with the energy of the size of a seed faith?

8.1 Massive Iron Mountain

Scaling the size of the mountain that can lift

Consider a mountain in dimensional cone-shaped radius of 100 m and 100 m in height built in massive iron. We know that the iron density is 7.874 g/cm^3, the volume of a right cone [83, 84] is given by

$$V = \frac{1}{3}\pi R^2 \tag{30}$$

to $R = H$ have

$$V = \frac{1}{3}\pi R^3, \tag{31}$$

absolute density that is equal to the ratio between mass and volume of the body,

$$d = \frac{m}{V}, \tag{32}$$

the acceleration of gravity is g = 9,80665 m/s^2 and the gravitational potential energy surface Eq. (3),

$$U = U_0 + mgy,$$

to $U_0 = 0$,

$$U = +mgy \tag{33}$$

so we can calculate how high you can raise this mountain massive iron with the energy of a mustard seed.

making the Eq. (28) equals (34), and by replacing the mass ($m = d\,.V$), Eq. (33) and V given by Eq. (32)

$$E = mc^2 = U = +mgy \Rightarrow E = d\frac{1}{3}\pi R^3 gy \Rightarrow$$

$$y = \frac{3E}{d\pi R^3 g} \tag{34}$$

that is the height y which can lift a mountain in the form of massive iron cone, with the mass energy of a mustard seed.

for m = 1.667 mg, one has $E \approx 1.498.10^{11}\,J$, therefore:

$$\Rightarrow y \cong 1.85725m \tag{35}$$

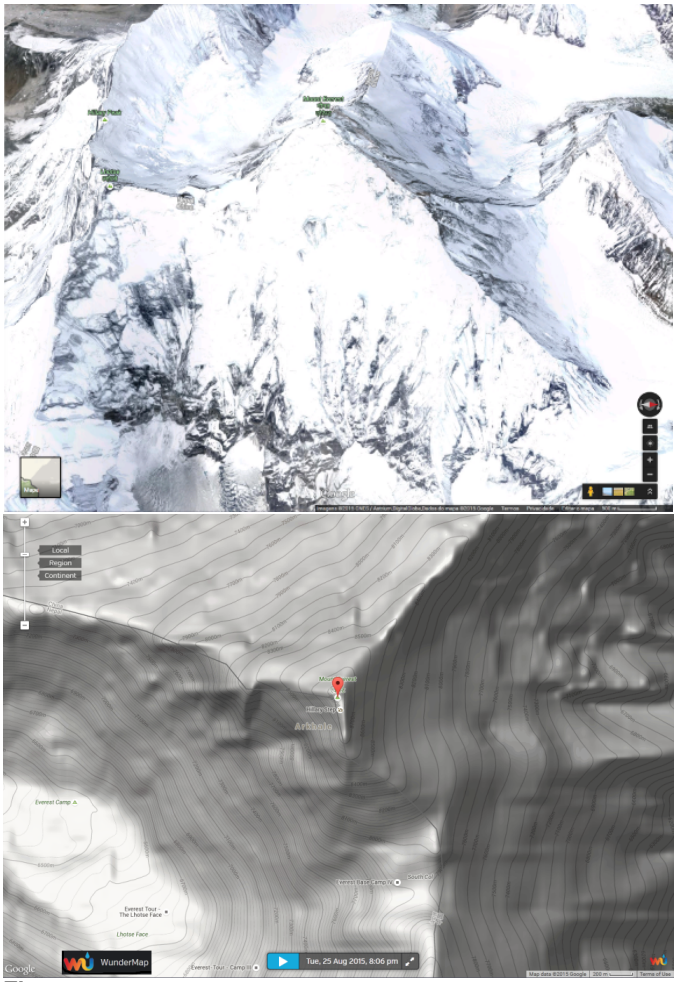

Figure 5. Mount Everest, 27°59'20.9"N 86°55'31.3"E, Google Map. [86, 87]

for m = 9.46 mg, one has $E \approx 8.502.10^{11}\,J$, therefore:

$$\Rightarrow y \cong 10.54095m \tag{36}$$

[23]

8.2 Rising Mount Everest

The Figures (2) and (5) the shape of Mount Everest is an equilateral triangular pyramid whose side of the triangular base is about 5,200 m, and the height from the base camp is 3,548 m to its top.

Similarly we calculated how high we can build a massive iron mountain in the previous item, we will calculate how high we raise the mount everest, watching him from camping base, only with the energy of a mustard seed, for given mass.

Let us consider the formation of basalt mountain, whose density is 2.7 g/cm^3, the acceleration of gravity starting from the surface g = 9.80665 m/s^2 and the volume of a pyramid [83, 84, 85] is given as:

$$V = \frac{1}{3}(Base\ area)\cdot H \tag{37}$$

Then we calculate first the area of the base of the Mount Everest, seen here in the shape of a pyramid with equilateral triangular base. As the area of a triangle [83, 84] is given by:

$$A_{(\Delta)} = \frac{Base.Height}{2} \tag{38}$$

$$A_{(\Delta)} = \frac{5,200m.4,503.332m}{2} \cong 11,708,663.2m^2 \tag{39}$$

area triangular base of the Mount Everest.

The volume will be given by, Eq. (38):

$$= \frac{1}{3}(11,708,663.2m^2)\cdot 3,548m \tag{40}$$

$$\Rightarrow V \cong 1.385.10^{10}m^3 \tag{41}$$

Now calculating how high y we raise the Mount Everest, we have:

$$E = mc^2 = U = +mgy \Rightarrow E = dVgy \tag{42}$$

$$\Rightarrow y = \frac{E}{dVg} \tag{43}$$

for m = 1.667 mg, one has $E \approx 1.498.10^{11}\,J$, therefore:

$$\Rightarrow y \cong 4.09.10^{-1}mm \tag{44}$$

for m = 9.46 mg, one has $E \approx 8.502.10^{11}\,J$, therefore:

$$\Rightarrow y \cong 2.32.10^{0}mm \tag{45}$$

[23]

8.3 Rising Mount Sinai

The Figures (3) and (6) show the shape of the Mount Sinai that resembles a cone radius of approximately 350 m 385 m in height, ie its base at 1,900 m elevation above sea level, to its top to 2,285 m. In the same way we calculate how high you can build a massive iron mountain, Mount Everest, we calculate to Mount Sinai, to the energy of a mustard seed. Let us consider the formation of granite mountain, whose density is 2.700 g/cm^3, the acceleration of gravity starting

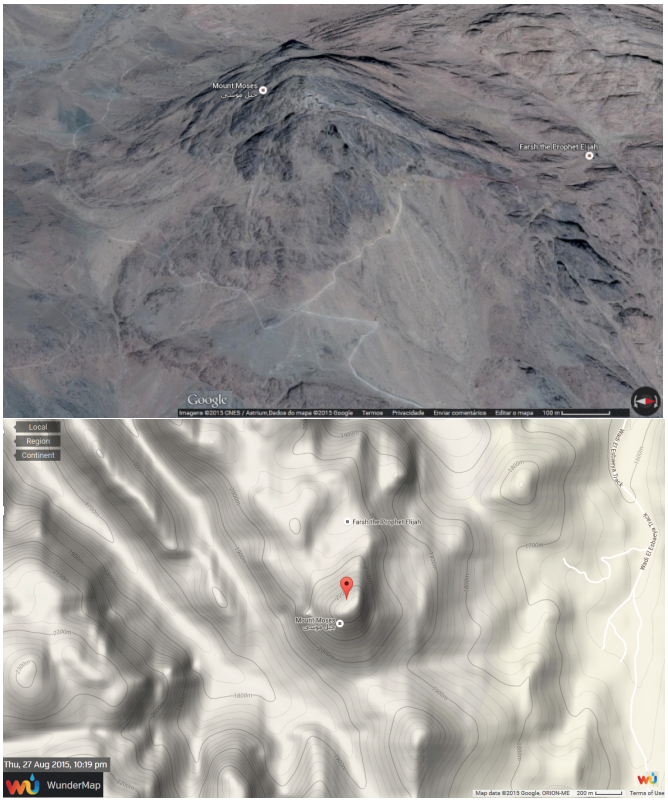

Figure 6. Mount Sinai, 28°32'16.1"N 33°58'27.9"E, Google Map. [86, 87]

from the surface $g = 9.80665$ m/s^2 and the volume of a right cone [83, 84] is given as:

$$V = \frac{1}{3}(Base\ area) \cdot H \tag{46}$$

Then we calculate first the area of the base of the Mount Sinai, that is a circumference of 350 m radius. As the area of a circumference [83, 84, 85] is given by:

$$A = \pi . R^2 \Rightarrow A = 384,845.1 m^2 \tag{47}$$

area base of the Mount Sinai. Calculating the volume [83, 84, 85] of Mount Sinai, we have:

$$V = 49,388,454.5 m^3 \tag{48}$$

Now calculating how high y we raise the Mount Sinai, we have:

$$\Rightarrow y = \frac{E}{dVg}$$

for m = 1.667 mg, one has $E \approx 1,498.10^{11} J$, therefore:

$$\Rightarrow y \cong 11.46cm \cong 114.55mm \tag{49}$$

for m = 9.46 mg, one has $E \approx 8,502.10^{11} J$, therefore:

$$\Rightarrow y \cong 65.05cm \cong 650.15mm \tag{50}$$

9. Discussions

The mustard seed has variable mass between 1.667 to 9.46 mg, and its equivalent mass and energy is between $E \approx 1.498.10^{11} J$ and $E \approx 8.502.10^{11} J$. With this energy, considering it as gravitational potential energy can raise a mountain of solid iron at a height between $\cong 1.85725m$ and $\cong 10.54095m$, Mount Everest between $\cong 0.409$. mm and $\cong 2.32$. mm and Mount Sinai between $\cong 11.46cm \cong 114.55mm$ and $\cong 65.05$ cm $\cong 650.15$ mm.

Faith is unconditionally to a hypothesis that the human being begins to consider as truth. Faith is energy for energy medicine, energy therapy, or energy healing, are branches of alternative medicine. Energy is energy, no matter how it is. As conserved energy can be used in forms diversar.

10. Conclusions

The calculations showed that despite a small mass, between 1.667 to 9.46 mg, when converted fully energy by the equation $E = mc^2$, it generates a lot of energy. This may raise a massive iron mountain, cone-shaped, 100 m height, to ≈ 9 meters above the ground. Going further, also can be with the same energy, lift Mount Everest to $\cong 2.32$ millimeters and Mount Sinai to $\cong 6.5015$ meters above the ground.

If we consider the concepts presented that faith is a form of energy, and energy is energy, no matter what form it generated, or how it is, with this energy "faith" can move a mountain.

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