Generation of quarks, neutrons and protons using high-energy electromagnetic radiation

PD Dr. Melissa Blau, University of Tübingen, Otfried-Müller Str. 10, 72076 Tübingen, Germany

Abstract

The Big Bang radiation, like the cosmic radiation, is a high-energy particle radiation and presumably the result of thermal radiation at extremely high temperatures in the Big Bang and therefore electromagnetic radiation. This is shown by new, own calculations of the down quark mass, which can be derived exactly from the radiation formulas ($m=h/c\lambda$). Possibilities of generating quarks up to protons or heavier elements can be derived from this knowledge, which are presented below.

A black body emits radiation at a wavelength of 10^{-5} m at 289.78 K. Since the temperature in early space corresponds to the square of the frequency of the particles, which has a temperature-forming effect ($1/2mv^2=3/2k_BT$, $v=2\pi rf$), if the temperature of the Big Bang radiation is known ($\surd e^2k/m^2G*2.725*3$ K 1= $3.894*10^{20}$ K) can be deduced by extrapolation to the wavelength of the Big Bang radiation. A particle mass of 4.6441255 MeV/c2 is calculated from hc/λ, which corresponds exactly to the mass of the d-quark and proves the hypothesis.

The fact that antimatter hardly occurs in our universe also speaks for the emission of down quarks as the only particle in the big bang.

The difference to the adjacent and partially overlapping gamma and X-rays in the EM spectrum is that beginning from this energy, due to the now higher frequency and particle expansion, gravitational mass with a specific density distribution, namely m/r^2, develops. In contrast to this, photons have no rest mass and the speed of exactly c, therefore photons cannot be slowed down either. It is questionable and not clear whether gamma radiation below a wavelength of 3.75 pm still has a spin of 1 and a rest mass of 0, since gamma radiation can be slowed down. Rebka and Pound were able to demonstrate a mass for these photons in their 1960 experiment for gamma rays. In addition, photons are deflected by large masses. The radio emission of a quasar (which perhaps also contained gamma radiation, as is usual with quasars) confirmed Einstein's assumption about the double angle of the deflection up to a 3% error. On the other hand, the double angle also arises from the deflection of the photon from a straight into a curved path , so that the spin of the gravitational radiation of the sun with the value 2 (tensor wave with spin 2) comes into play. The double value of the angle could not be exactly confirmed in the solar eclipse, angles between 1.5" and 2.2" were found instead of the expected 1.75 arc seconds, as predicted by Einstein. The perihelion rotation of the planets can also be precisely determined for other reasons, such as a second force field in our solar system, which is created by the mass distribution of the planets.

Photons probably have a very small mass, but this is not comparable to the m/r2-distributed mass of fermions. Albert Einstein considered photons to have mass. The mass of fermions is defined by E divided by the potential mG/r (v is the quantized rotational speed of the particle), a corresponding potential only exists for an m/r^2 mass distribution, such as that of quarks, electrons and larger particles (fermions and hadrons) to have. Quarks were emitted with very high rotational and flight speeds and due to the time dilation of large inertia of the mass near c. $E=\surd E_0^2+E_{kin}^2$ = $hv\surd(1/(2\pi r)^2+1/l^2)$ is the same for all particles (E_0 is the rest energy and vq is the quantized velocity $h/4\pi mr$, $E_0=h^2/J$). $E=mc^2$, on the other hand, is only true for quarks and electrons (and neutrinos). For protons, $E_0 \sim m_0c^2/16$ applies; $E=mc^2$ can only be reached if protons are placed in a magnetic field that more than quadruples the rotation speed of the protons. The magnetic field density of a proton is 43 uT.

Because released energy has three degrees of freedom, the preferred direction of motion is rotational motion in a plane (rotational energy) and direction of flight perpendicular to that plane (kinetic energy). The rotational energy of substomar particles moving with (near) c is at most equal to the kinetic energy. The rotational energy, which also existed with the quarks in the big bang, also explains why everything in the universe rotates. Due to the Heisenberg-Millette inequality, the angular momentum of the particles can only be measured as a multiple of h/4π. The correct angular momentum depends on the actually existing rotation speed of the particles and is usually much lower. For photons with no rest mass, the angular momentum can be derived in a different way as h/2π and it just happens to be twice the angular momentum of fermions. The angular momentum of W bosons is 0.91 h/2π and can only be measured as h/2π. That particles do not really rotate is simply wrong and neither experimentally proven nor shown. In measurements and in the case of energetic relevance or exchange, the angular momentum is always quantized to a multiple of h/4π or h/2π. Even in the case of molecules, a rotational movement could be detected by electron microscopy. With the Thier-Haas effect, which is based on this effect, even a macroscopically visible rotational movement can be observed. From data in CERN a rotational frequency of protons of 2072 Hz could be found, which fits when one equates the centripetal force with the gravitational force ($f=mG/2\pi r^2$), with an error under 0.1%. This fast rotation value agrees with the so-called trembling motion, which is the case for particles was postulated. The trembling movement is a theoretical fast movement of elementary particles electrons or protons, those of the (relativistic) Dirac equation to obey. The tremors fit here calculated results. The existence of such movement was postulated by Gregory Breit in 1928 and by Erwin Schrödinger in 1930 as a result of his analysis of wave packet solutions of the Dirac equation for relative vistic electrons confirmed in vacuum.

The prerequisite for the electromagnetic Big Bang radiation is that an extremely hot black body (matter) has existed at the origin. A second prerequisite is that the matter had a very specific temperature, since the down quark mass, which depends on this temperature, is essential for the probability of the formation of protons and electrons.

Immediately after the Big Bang there were initially only 2 physical quantities, the space that was opened up and in which Big Bang particles moved and the time that passed in the process. All natural constants only developed in the following. Particles from the Big Bang emission are the down quarks, which are "heavy" photons and which combine to form baryons and neutrons at very high temperatures. After the emission of down quarks in the Big Bang and the formation of quark triplets (Δ baryons), which were unstable and decayed into neutrons, and after the formation of electrons through muon decay, the exchange particles in neutron decay into protons, in which a down- Quarks are split off and replaced by the exchange particle, the up quark, the temperature dropped significantly, pre-galaxies formed from 300,000 years after the big bang, while now, due to a significant increase in collisions, neutrons partially release a W boson into protons converted. The primordial galaxies emitted thermal radiation, which at around 10^13 K and $3.5*10^{12}$ K probably produced a comparatively small amount of unstable bottom quarks and strange quarks. These particles are subject to the nova force, since they can briefly form real or virtual triplets (e.g. hyperons, omega baryons). At $1.0885*10^{10}$ K there was an implosion, the 10 billion K hot proton and hydrogen clouds again emitted down quarks, which repeated the initial stable atom formation process and produced the extreme mass in the galaxies. This was repeated several times (I called it the big bang storm) until 10^{79} protons and neutrons had formed, after which primordial nucleosynthesis followed immediately from a temperature of 10^{10} K. Already 300 million years later the first galaxies with stars formed and the universe continued to cool down. But even 520 million years after the Big Bang, such implosions still took place as one of them could be registered in a distant galaxy. 880 million years after the Big Bang, the universe was still 20 K hot and there was still a lot of non-ionized hydrogen. After neutrons and protrons had formed, whose rest energy was only one-sixteenth of mc^2 and the rest was free energy, of which only about 1/e is available today due to the expansion work done, free, dark energy is found in today's universe a proportion of 15/e=15/2.7=5.55:1 which corresponds to visible matter of 15.26%, the rest are gravitons at 2% (dark matter) and dark energy at approx. 83%. Dark matter does not exist to any relevant extent, galaxies and galaxy clusters attract other galaxies with 2G to 4G, so this is mathematically consistent with Euclidean geometry and the flat Universe. Derivation: $E_0=mv^2=mh^2/4\pi^2m^2r^2=4\pi^2m^3c^2h^2/m^2*16h^2=mc^2/16$, $r=4h/2\pi mc$.

The top quark could be generated by a certain center of mass energy in the LHC. At this energy, a top quark triplet (which cannot be detected because of its extremely short lifetime) is likely to be formed briefly or virtually. When this baryon decays, a W boson is emitted and a top quark splits off, which is replaced by the exchange particle, the bottom quark, which could also be detected. The analogy to the ß-decay of the neutron suggests that a down quark is split off here as well, but it probably resides within the W boson and thus remains undetected. This can also be demonstrated with the anomalous magnetic moment of the muon, which is also subject to ß-decay, and the calculated mass of the exchange particle composed of a d-quark and the muon according to the nova formula. The quarks of the 2nd and 3rd generation are artificially generated unstable quarks that occur in nature only in the cosmic radiation, the source of which is not sufficiently known, it is assumed that very high-energy radiation from other galaxies play a role.

The decay of the strange quark into lighter u quarks merely signals that the kaon is interacting with the nova ground force (see below), i.e. the remaining single down quark is considered split off and replaced by a u quark. The fact that charm quarks and other heavy quarks can also briefly form in protons has not yet been sufficiently proven, but opens up access to interpretation possibilities, according to which the heavier quarks played a certain minor role in the Big Bang and here, for example, inverse processes of a kaon decay are relevant occur in which the u quark in the proton creates a strange or charm quark.

Accordingly, there are six basic forces (exchange particles, rest mass):
1) Nuclear force: quark bond breaking (muon, W boson, (tauon) $1.885*10^{-28}$ kg, $1.443*10^{-25}$ kg)
2) Nova force: Separation of a d-quark or a quark of another generation (u-quark or other corresp. quarks, $3.85*10^{-30}$ kg), named after the nova quantum gravity, which underlies what is described here
3) Gluon force: collision of nucleons with quarks (gluons, theoretically $2.67*10^{-31}$ kg)
4) Coulomb force (photons, 0)
5) weak interaction (muon, W boson decay, neutrinos $1.43*10^{-38}$ kg)
6) Gravity (Graviton?, 0)

All six basic forces can be determined by the formula nova=1 are combined with $n=4\pi e_0\lambda/e^2$, a is the Sommerfeld fine structure constant, o is the potential and v is the interacting property.

Gravity is generated by neutrons and protrons by their fast oscillatory circular motion, which together with the quark emission mechanism described here describes the nova quantum gravity, named after the contained unified nova=1 formula for fundamental forces. Also macroscopic, fast rotating masses can generate a gravitational field or additional force field, as is the case for all galaxies, which thereby attract each other in a range of $c/16\pi f$ with 2G to satisfy the Heisenberg-Millette inequality $mvr=h/4\pi$. This can be shown using the gravitational pull of the neighboring galaxy Andromeda. The finite gravitational field with its radial field lines even attracts virtual masses and even radio radiation instantaneously. In the solar system, the gravitational field extends beyond Pluto, and the shape of the field is similar to the Sun's magnetic field. The hypothetical graviton has a theoretical mass of about 10^{-64} kg. The connection between electromagnetic interaction and gravitation arises when the Coulomb force (=gravitational force) is decoupled from the electric charge (2d+u=0, 2u+d=+1) after the muon decays into an electron. Due to the 40 times smaller distance between the quarks compared to the proton radius, the structure in a neutron or proton is 40*5/2=100 times stronger than the gravitation between nucleons at the decoupling temperature of the Coulomb force.

According to calculations, terrestrial gamma-ray bursts can release not only positrons and gamma rays, but also fast neutrons and protons. Neutrons have already been measured in discharges, but experimental confirmation for protons is still lacking. These gamma-ray bursts can produce secondary particles such as electrons, positrons, neutrons and protons with energies up to 50 MeV.

Neutrons could also be generated in the laboratory by lightning discharges, the generation mechanism remained a mystery back then in 2013. Presumably, at these high energies, down quarks were formed, which combined to form Δ baryons and then decayed into neutrons. In a similar experiment one would have to be able to determine the discharge energy or temperature on the one hand and on the other hand (and much more importantly) be able to technically prove short-lived and short-term processes and particles such as quarks, muons and delta baryons. This would provide conclusive evidence of how quarks, neutrons, and protrons formed shortly after the Big Bang. In order to generate protons from these neutrons, one would have to generate enough neutrons through the lightning discharges, which would then collide with each other and convert into protons after the emission of a muon.

In the large hadron collider, temperatures of 5.5 trillion °C were generated in 2011 using lead ions. Researchers are always striving to generate even higher energies and temperatures to create big bang conditions. Despite everything, this temperature was chosen too high for such purposes, to produce quarks you need hot matter of around 10 billion K. According to the Wien shift law, at a temperature of 10.885 billion °C EM radiation with particles of Mass 4.644 MeV/c2 emitted. The researchers operating the synchrotons would have to use accelerated lead or gold ions, which they shoot onto a coated plate, to generate this exact temperature by choosing the specific number of synchroton runs and to prove the formation of quarks, neutrons and, if necessary, protons using the usual method. The plate would heat up to 10 billion K at the point of impact and emit everything from quarks to neutrons.

Even an ultra-large laser with 192 bundled laser beams in California can already generate a hundredth of these temperatures. A further development of this laser with a correspondingly higher power could then produce a mini big bang with quark and proton production. You would have to use a hollow body as the radiation-absorbing material, in which you make a small hole with the laser in order to obtain a black body, which then emits quark radiation of a very specific mass.

Above all, however, the Big Bang theory cannot do without energy beyond space and time. In order to "ignite" the universe, a laser with 59 MJ/cm^2 that already exists today and an oversized laser tip with a diameter of about 40 km are necessary, and the whole thing would have to be placed at the beginning of time, which only God could have done, which is believed to have used a miniaturized version of Earth instead of an oversized laser. This would also explain the observed violation of the Copernican principle and the flat universe due to finely tuned initial conditions. Thus, some of the lowest moments in the angular distribution of the temperature of the background radiation are lower than predicted. The measured extreme values of the background radiation are almost perpendicular to the ecliptic of the solar system, with the deviation from the perpendicular moving within the limits of the measurement inaccuracies. Perpendicular to the sun, the gravitational field of the sun decreases to zero, particles that were in this region shortly after the big bang showed hardly any chaotic movement pattern and had a lower temperature. After expansion to full size, these areas remained colder than others even after background radiation had been emitted. This indicates that the Big Bang took place in our solar system, although it is naturally younger than the universe. A few years ago, matter older than the galaxy was found in the Milky Way. Since the Milky Way formed 200 million years after the Big Bang, when galaxies were scarce, this indicates that the Milky Way was probably infiltrated with an older galaxy from a previous universe. So the sun could also be older than thought and come from this earlier universe. The flat universe with its typical density of exactly $8.5*10^{-27}$ kg/m^3 corresponds mathematically with an assumed number of 1 trillion galaxies and a galaxy mass of a mean galaxy of 10^{11} sun masses of a spherical universe with the diameter of 93 billion light years of the formula $E=mc^2/16$ with an error of 1.83%.

An underground cave could have been used as a hollow body, in which a hole is made from the outside with the laser in order to generate a black radiator, so that maximum thermal quark radiation with a specific mass is produced. The universe of today's size would result from the implosion after the cooling of the radiation from $3.9*10^{20}$ K to 10 billion K. The search for corresponding craters with access to a cave led me to the Nördlinger Ries in Bavaria, the Blautopf near Blaubeuren, which is rather too small and more than 30 craters on the moon, measuring 40-50 km in diameter and usually several have side craters. Terrestrial gamma ray bursts and laser irradiation have in common that they can generate extremely high irradiation energies. Despite all this, gamma-ray bursts can provide a very reliable indication of how the world could have been created by a very high energy beyond space and time.

In order to meaningfully define a new physics beyond the Standard Model, one must ultimately ask oneself: What is formulated relatively incorrectly because the background is missing? Do established terms such as observable make any sense at all? What can you drop out in order to meaningfully, conclusively and exhaustively understand the physical construct beyound all things.