# Central Universe

(version 2)

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**Abstract**

The universe is oblique, the energy density distribution of the whole universe is uneven, and anisotropic. The formula of energy density distribution is derived in this paper. The universe has a center, the energy is emitted from the center and diffuses in a spherical shape, and the density of the center is the highest. Density is inversely proportional to the square of the radius of the universe,the larger the radius and the smaller the density. The mass of the whole universe is not less than $10^{61}$kg. The matter of the observable universe is erupted from the center of the universe，it is not just exploding once, but continuously exploding, and then gather matter to form galaxies. Now it is in the process of diffusion, eventually, it will spread to the edge of the universe and disappear. The age of the universe we measure does not represent the age of the universe as a whole.When the observable universe disappears,the central universe still exists, the above operation is still repeated. In the end, the whole universe ends with energy depletion.

Keywords: Anisotropic, Center, Density, Diffusion, Energy, Uneven, Universe

In paper of the numbers principles of natural philosophy, the author established a logarithmic function by analyzing the numbers 0 and 1, established a universe model after introducing the Planck length (Fig 1). Thinking that the universe is finite And calculated the diameter of the universe [1].

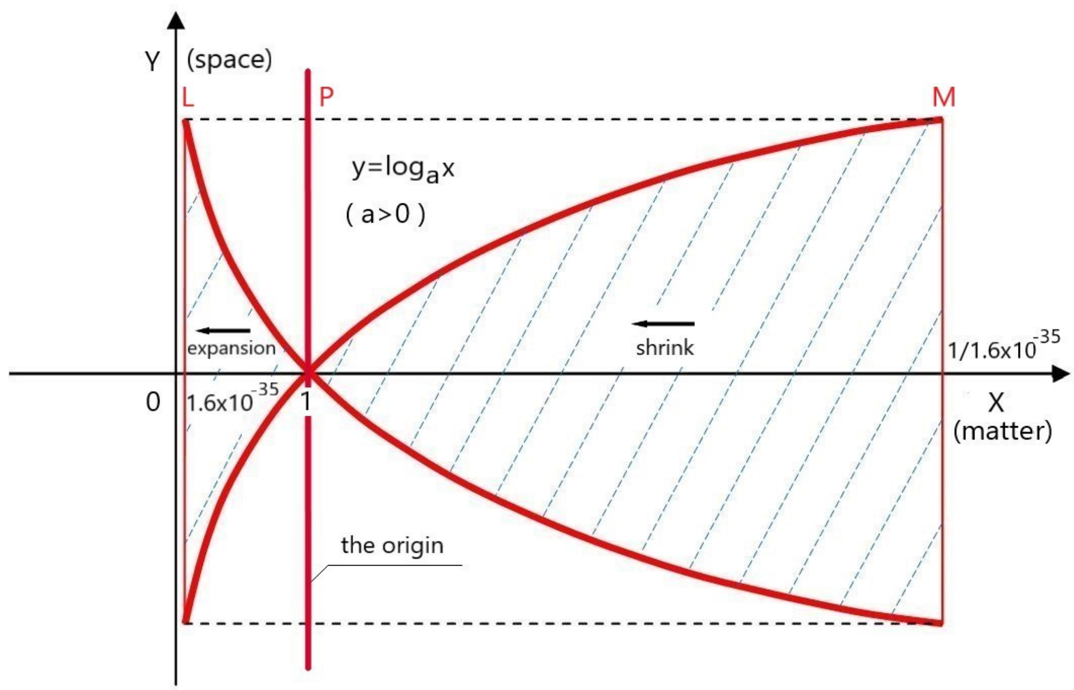



Fig 1

The diameter of the universe is:

$$D_u = 2|y_M| = 1/(1.6\times 10^{-35}) - 1 \approx 1/(1.6\times 10^{-35})\ \mathrm{m} \tag{1}$$

$D_u$ — The diameter of the universe

$y_M$ — y value of M end

The diameter of the universe is $1/(1.6\times 10^{-35})$ meter and is the reciprocal of Planck length. That is, the diameter of the universe $D_u = 1/\ell_P$ ($\ell_P$ — Planck length), it is a unit of length.

In this paper, energy and matter are equivalent, space and time are discrete.

## 1 Central universe model

1.1The universe is finite and its diameter is $6.19\times10^{34}$ meter. If it is finite, there is a boundary,if there is a diameter, there is a center[2] [3].What is the boundary and center like? what's beyond the border? the matter density is a cliff-like decline, and Is it all dark outside? we didn't find this kind of situation. I don't think there is a clear boundary in the universe, it's flat and gradually changing, there is a center with a high energy density, the density gradually decreases from inside to outside.

1.2 The energy density distribution of the whole universe is uneven, the highest in the middle, outward spherical diffusion. Diffusion is a process of gradual dilution and decrease of energy density, to the boundaries of the universe is minimum density. The maximum density, the current cosmic density and the minimum density exist at the same time.

The matter of the observable universe is erupted from the center of the universe，and then gather matter to form galaxies, out diffusion to the present density, and will reach the minimum density. The universe may be spinning [4], and the observable universe revolves around the center of the universe.

When the observable universe has finished the whole process, the universe is not over, it still exists, the above process is happening repeatedly. The age of the universe we measure does not represent the age of the universe as a whole.

## 2 Density distribution

A formula for the diffusion of energy to the spherical surface: Initial energy multiplied by diffusion coefficient, and can also be used for energy density diffusion. The initial density is the Planck mass based on Planck length $m_p/\ell_P$, the spherical diffusion coefficient is $1/(4\pi R^2)$.

$$\begin{cases} \rho_r = \dfrac{m_P}{\ell_P}\times\dfrac{1}{4\pi R_u^{\,2}} = \dfrac{m_P}{4\pi\,\ell_P\,R_u^{\,2}} & (\ell_P/2 < R_u \leqslant D_u/2) \quad (2) \\ \rho_r = \dfrac{m_P}{\ell_P^{\,3}} & (R_u = \ell_P/2) \quad (3) \end{cases}$$

$R_u$ — Cosmic radius

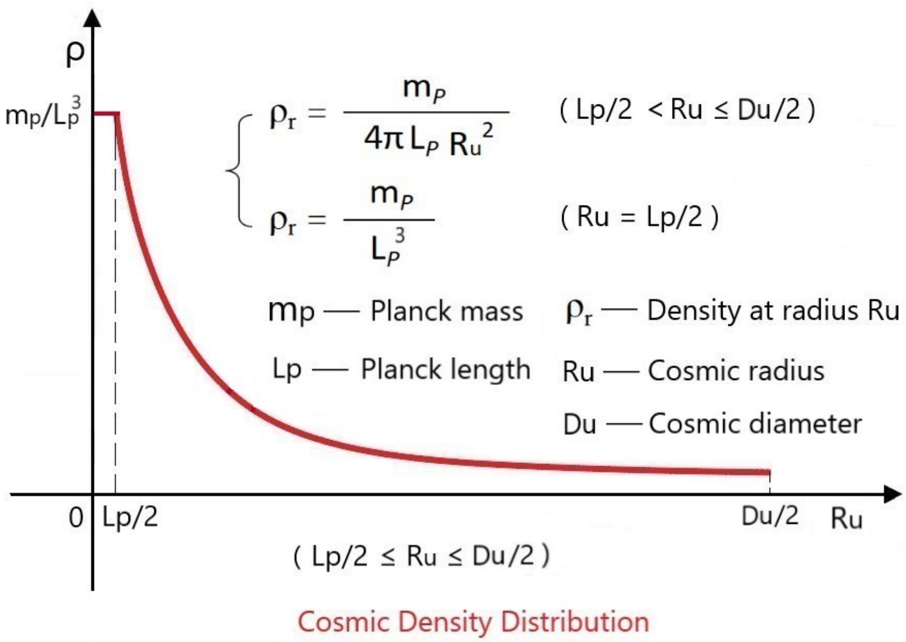
$m_P$ — Planck mass

$\rho_r$ — Density at radius Ru

$\ell_P$ — Planck length

Formula (3), when $R_u = \ell_P/2$, it's not a sphere, it's a Planck cube, so the density is $m_p/\ell_P^{\,3}$, it's the initial density of the universe.

Fig 2




The density at the center of the universe is Planck density, density is inversely proportional to the square of the radius. The density at Ru = Du /2 is minimal, the value is $1.12\times 10^{-43}$ kg/m$^3$, this is equivalent to only one electron in $10^8$ m$^3$ space. The boundary of the universe is a theoretical boundary, the density tends to infinitesimal and up to the Planck scale(Fig 2).

It is known from the formula (2) and $\ell_P = t_p \times c$ ($t_p$— Planck time, c—speed of light), At every one Planck time burst one energy, and the value is Planck mass, which spreads outward at the speed of light.Therefore, the thickness is based on Planck length,the mass of each layer on the sphere is equal, that is, Planck mass,the density of each adjacent layer is not equal, and the inner layer is larger than the outer layer.

The mass of the entire universe (within the diameter Du ) $W=m_c+m_p\times Du/2\ell_P \geqslant 4.17\times 10^{61}$kg， $m_c$—the mass of the center. There is also mass outside of diameter Du, which is meaningless because the density is too small.

**3 Discussion**

Formulas (2) and (3) are standard model formulas, while the situation in the central universe may change. We need to consider the changes under the standard model.

3.1 If the universe is spinning[4], the observable universe revolves around the center of the universe. The universe will have a disk like the Milky way， the mass is gathered in the disk. Formula (2) needs to add coefficient k.

$$k = \frac{\pi R_u}{h} \tag{4}$$

h — The thickness of the cosmic disk

We get the formula (5):

$$\rho_r = \frac{k m_P}{4\pi L_P R_u^2} = \frac{m_P}{4h L_P R_u} \qquad (\ell_P/2 < R_u \leqslant D_u/2) \tag{5}$$

Formula (6) can estimate our position in the universe.

$$R_u = \frac{m_P}{4h L_P \rho_r} \tag{6}$$

The value of $m_p$ is $2.18\times10^{-8}$ kg, $\rho_r$ take the density of ordinary matter $4.08\times10^{-28}$ kg/m$^3$ ,If the value of h is 2×13.8 billion light-years.
Ru = $3.16\times10^{27}$ m. This is our distance from the center of the universe.
Formula (5) can calculate the inner side and outside density value of our 2×13.8 billion light-year universe, their difference is less than 10%.

3.2 The standard model is every one Planck time burst one energy, the value is Planck mass. If there are n emitters in the center of the universe and outbreak at the same time, then, the formula is multiplied by n.

**4 The operation of the central universe**

The energy in the center of the universe comes from the contraction of the universe[1]. After shrinking to the origin, there was more than one explosion and is continuous explosion, continuously emit energy outward. How much energy does the center of the universe have and how does it work? Let's discuss it now.

4.1 The center of the universe gathers enough energy, the density is $m_p/\ell_P^3$, and it is emitted outward. As the energy decreases, the density of the center decreases,but it's still the center high,the density decreases with the growth of the cosmic radius (Fig 3).

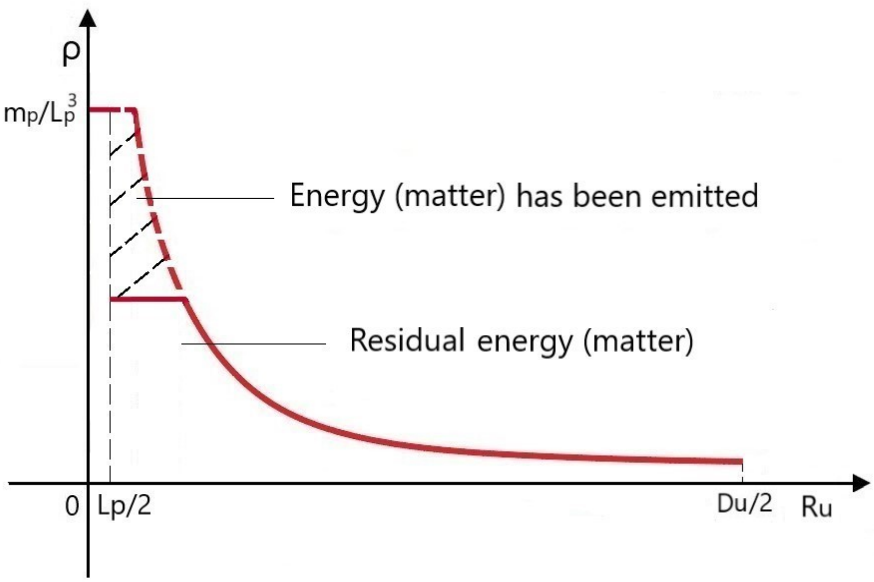
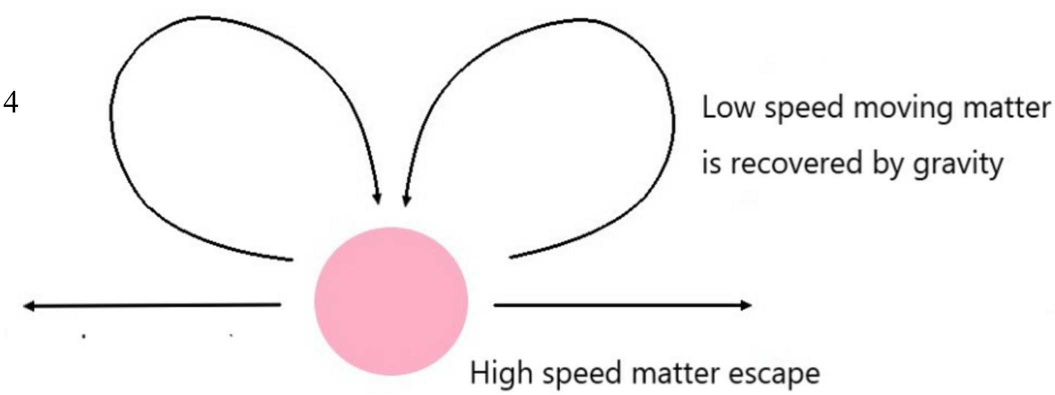



Fig 3

4.2 After the launch of matter from the center of the universe,high-speed matter escapes from gravity, low-speed matter is recovered by gravity.There is matter loss in the system (Fig 4).

Fig 4




4.3 Energy flows in from a physical (quantum) vacuum[5]，maintain the operation of the central universe. With the change of physical conditions, the flow of energy may also be limited,this mode of operation is terminated.

These three operation modes,the energy in the center of the universe was eventually consumed. After that, the universe gradually flattened，until minimum density. At this time, the whole universe is homogeneous and isotropic, any 1m3 density is equal,the universe ends.

**5 Conclusion**

The universe is oblique, and anisotropic. The energy density distribution of the whole universe is uneven(it is uneven in the horizontal plane and uniform in the inclined plane). The universe has a center, the energy is emitted from the center and diffuses in a spherical shape, and the density of the center is the highest. Density is inversely proportional to the square of the radius of the universe,the larger the radius and the smaller the density. The mass of the whole universe is not less than $4.17\times10^{61}$kg.

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