

Relativistic Heavy Ion Collider and Cosmic Microwave Background Radiation

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The equation in my book, The Modified Hawking Field, is in agreement with the RHIC experiment of February 2010. It gives for 40TeV, 1.6×10^{12} Kelvin, the temperature of gluon plasma.

This equation for CMBR(temperature 2.73Kelvin) gives mass, which is very close to the mass of the electron and positron. Also this equation gives the Plank temperature if we set the mass, which is 5 times larger than Hawking, (M_{P-H}) and length $l_T = \lambda/2\pi$.

For length $l_T = l_g = \sqrt{2\pi}lc$, the function gives a temperature of 4 trillion Kelvin at 40TeV.

See pages of my book, 6, 34, 53

Modified Hawking Field, ISBN 978-3-8433-6512-3

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Function

$$m = 0.511 m_e T^{(2/3)}$$

m: mass-energy , m_e : mass of electron , T: temperature

OR

$$m^3 = \sqrt{2\pi} \cdot e^3 \cdot T^2 / (\pi^{*2} \cdot c^4)$$

$\pi^* = 3.1598$ with units, constant

m:mass-energy , e:electric charge , T: temperature , c:speed of light

$$\pi^{*4} = h^2 \cdot C^2 \cdot G / Kc^3 \cdot Kb^4$$

h: Planck constant , Kb: Boltzman constant , G: gravitation constant , Kc: Coulomb constant