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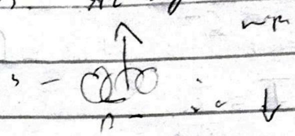
I calculated Hawkins Radiation using its formula to calculate T

2nd law of thermodynamics.

$dS \geq 0$

Entropy of an isolated system formed with combination of 2 objects will always be larger than sum of entropy of combined objects. At any case value will never decreases



entropy → temperature → radiation

How Black hole emitts radiation ?

Vaccum is not empty according to quantum physics, empty space has virtual matters ~~which~~ which are Positive matter and negative matter collide and give fluctuations (energy fluctuations) or (quantum fluctuati

Positive (+) matter – negative (-) antimatter.

attract

destroy each other.

mass ↓ radiation ↑

collide

(+) (-)

(O) ← Go to horizon (-) (+) →

" eventhorizon.

Radiation → Hawking rad

ontradiction

Black hole Formation

…adow

when some one sees positively charge Particles escaping Black hole, obs sees it as radiation. (Hawking rad

$e = mc^2$ (If black hole's mass decrease, it temp

As negative energy is going into blackhole so, mass is decreasing as $e \propto m$

⇒ Hawkins radiation of a black hole

$$T = \frac{\hbar c^3}{8\pi G M k_B}$$

1) T = Temperature of black hole (Hawking temperature)
2) $\hbar$: Planck's constant ($\hbar = \frac{h}{2\pi}$, where h is planck's constant.
3) C = speed of light in vaccum.
4) G = Gravitational constant.
5) M = Mass of the black hole.
6) K_B = Boltzman constant.

Event horizon radius $r_s = \frac{2GM}{c^2}$

K (Schwarzschild) black hole = Gravity pull event horizon (how strong)

$$K = \frac{c^4}{4GM}$$

K to T connection.

$$T = \frac{\hbar K}{2\pi k_B}$$

$$T = \frac{\hbar}{2\pi k_B} \cdot \frac{c^4}{4GM}$$

$$T = \frac{\hbar c^4}{8\pi G M k_B}$$

C reduced

$$T = \frac{\hbar c^3}{8\pi G M k_B}$$

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Event horizon radius $r_s = \frac{2GM}{c^2}$

Surface gravity κ of Shwarzchild black hole $= \frac{c^4}{4GM}$.

Hawking's derivation $T = \frac{\hbar \kappa}{2\pi k_B}$,

$$\boxed{T = \frac{\hbar}{2\pi k_B} \cdot \frac{c^4}{4GM}}$$

$$T = \frac{\hbar c^4}{8\pi G M k_B} = \boxed{\frac{\hbar c^3}{8\pi G M k_B}} \rightarrow$$ c^4 reduced to c^3 balanced dimensional consistency with T.

$\hbar = \frac{h}{2\pi}$, $\boxed{h = 6.62607015 \times 10^{-34} \text{ J.S}}$.

$\boxed{\hbar = h / 2 * 3.14}$

$c = 299\_792\_458$, or $\boxed{c = 3 * 10 ** 8}$

$\boxed{\text{cube} = c^3 = c ** 3}$.

$2\pi = 2 \times 3.14 > \boxed{8\pi = 8 * 3.14}$.

$2\pi = 2 * 3.14$.

$F = G\, m_1 m_2 / r^2$, $G = F\, r^2 / m_1 m_2$.

$\boxed{G = (F * r ** 2) / m1 * m_2}$

Black holes can be calculated using different equations.

we use non-rotating (Schwarzchild) black holes)

$r_s = \frac{2GM}{c^2} = M = \frac{c^2 r_s}{2G}$.

$\boxed{c^2 = c ** 2}$.

$\boxed{c^2 r_s = (c ** 2) * r_s}$

$\boxed{M = ((c ** 2) * r_s) / 2 * G}$.

Boltzman constan (K_B)

using Thermodynamic equation.

$$S = k_B \ln(\Omega) = k\_B = \frac{S}{\ln(\Omega)}$$

S = 5.

Omega = 1000 # microstates.

$\ln(\Omega)$

= $\boxed{\text{np.log (omega)}}$

$\boxed{\text{K\_B = S / np.log (omega)}}$.

when we combine all formulas we print.

Print (T)

Give final & Hawkins radiation,

final equation says if mass of black hole increases the radiations will decrease and If mass of black hole decreases then radiations will increases as

$E \propto m$.