conferenceseries.com

J Phys Chem Biophys 2017, 7:3 (Suppl)
DOI: 10.4172/2161-0398-C1-023

2nd International Conference on

PHYSICS

August 28-30, 2017 Brussels, Belgium

Is the Hawking's scenarios of black holes evaporation the only possible solution?

Gaina Alexei
Institute of Applied Physics, Republic of Moldova

The author is considering two possible scenarios of black holes evaporation. First one, coincide with well known S Hawking's (1974, 1975) scenarios, according to which actually black holes (created after the Big Bang, perhaps) with $M < (4-7)10^{14} g$ should evaporate, while another, which would take into account the occurence of mass particles bound states (see [1]), especially Bose mass particles, of which the Higgs boson is of special interest. The second scenarios suppose a concurrence between the Hawking process and Bose mass particles exponentially fast accumulation with a rate of Black Hole's mass evolution:

$M = M_0\left(1+\frac{m^6 M_0^3 t}{2\pi(1+s)^2}\right)^{-1/3}$, M_0 =initial Black Hole's mass, s =emmited particles spin Eq. (1)

When the time is going to the mass of a Black Hole is going to 0. The time of diminishing by a half of the initial mass of a Black Hole is:

$t_{1/2} = \frac{14\pi(1+s)^2}{m^6 M_0^3}$ Eq. (2)

which corresponds to ~54700 sec=15.19 hours for a Black Hole of mass $M_0 \sim 2.25 \cdot 10^{11} g$ (which is nearly 1 mil tones in weight). This would occurr due to generation of a Higgs boson (s=o) with mass $m_{Higgs} = 1Tev = 0.17(7)\cdot 10^{-20} g$. If the Higgs boson mass is 125 Gev, the time of diminishing by a half of the Black Hole's mass would be ~ 97 sec. For ,when the innermost stable classical (quasi-classical) and quantum mechanical orbit still exist $t_{1/2} \cong 5\cdot 10^8 s \sim 15.8y$.

alex_gaina@yahoo.com