Hadronic Fission and Tetraquark Particles

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1 Fusion process to make the reactor's fuel

Through the bombardment of the atomic nucleus (protons and neutrons) with quark beam, we have:

$$Q + P^{+} \to Tetraquark\, hadron + Boson\square \tag{1}$$

$$Q + N^{0} \to Tetraquark\, hadron + Boson\square \tag{2}$$

Only one step remained to maintain the technological requirements, for advanced particle collider, for the fusion bombardment[2] [4] [3] of an accelerated meson ${}_2Meson$ (containing a quark and an anti-quark) with an accelerated baryon, or the other particles such as baryons of the tiritium nuclei, or baryons of lanthanides nuclei ${}_3Baryon$, to make new form of elements and matter X, $\acute{X}$, $\acute{Y}$, Z, $\acute{Z}$. And these elements once would be used for making new materials (and it is neccesary that I mention it here for the first time). The equation for the fusion reaction is:

$${}_2Meson + {}_3Baryon \to {}_4X + {}_1Boson\square \tag{3}$$

$${}_2Meson + {}_3Baryon \to {}_5\acute{X} \to {}_4\acute{Y} + {}_1Boson\square \tag{4}$$

For the equation (3) and (4) ${}_4X$ and ${}_4\acute{Y}$ they can decay as the following:

$${}_4X \to {}_3Z + {}_1Boson\square \tag{5}$$

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$$_4\acute{Y} \rightarrow {}_3\acute{Z} + {}_1Boson\square \tag{6}$$

If Z and $\acute{Z}$ naturaly being considered as heavy unstable atoms, over proton and neutron emission they may decay into a stable atom, a few gram of this heavy unstable tetraquarks would release a great amount of fission energy inside the reactor's core.

2 Fission process inside the reactor's core

Inside the hadron reactor, through the hadronic fission of heavy semi-stable tetraquark or pentaquark hadron or even for a heavy baryon, $_{z+1}H$ as the semi-stable heavy radioactive hadron, gives the Q_x quark to the nearby $_zH$ hadron:

$$_zH + Q_x \rightarrow {}_{z+1}H \rightarrow {}_{z-1}H + {}_{z-1}H\square \tag{7}$$

$$_zH + Q_x \rightarrow {}_{z+1}H \rightarrow {}_zH + Q + Boson\square \tag{8}$$

$$_zH + Q_x \rightarrow {}_{z+1}H \rightarrow {}_{z-1}H + 2Q + Boson\square \tag{9}$$

The hadronic fission releases a much higher rate of heat inside the core of hadron reactor in the form of uv waves, gluons, gamma waves, gema waves, and free quarks, instead of free neutrons (and gamma waves) which usually are produced by normal nuclear fission reactions to heat the water for the turbines. These equations above would be the hadronic fusion and fission equations.

The essence of nuclear fusion is that energy can be released by the rearrangement of nucleons between the initial state and the final state nuclei. In earliest form of hadron fusion, two heavy baryons (Λ_c) undergo fusion to produce the doubly charmed semi-stable baryon (Ξ_{cc}^{++}) and a neutron (n) resulting in an energy release of 12 MeV. This reaction is a quark-level analogue of the deuterium–tritium nuclear fusion reaction ($DT \rightarrow {}^4He\,n$). Alike when 3H (tritium) naturally decays into helium-3. And alike when uranium-235 decays into barium and krypton.[1]

References

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