

## Top Quarks Decay So Rapidly That Hadronization Cannot Occur, Considerably Restricting Decay Possibilities

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Abstract: Top quarks decay so quickly that they do not have a chance to hadronize to particles made of bound quarks. Instead they decay to form bosons or leptons.

The fact<sup>1</sup> that top quarks decay so fast that they cannot hadronize into bound quark particles means that The matter type decay products of **top quark** matter of **171.7 GeV** could only be Higgs bosons of 125.0 GeV, weak Z particles of 91.19 GeV, W+, W-bosons of 80.38 GeV, Z(4430 ) heavy neutrinos, the 3 lighter neutrinos, taus of 1776 MeV, muons of 105.6 MeV, electrons of 0.511 MeV, and archaic electrons of 0.5 MeV (12 mass -particle types in all).

This author has published on the fact that dimensionless dark matter<sup>2</sup> top lepton tau-antitau particle pairs of **3552 MeV** dark energy exist. Here their existence undoubtedly **signals** the 3.55 MeV Up neutron quark and the fact that **nature** requires 2 of them to form each neutron. We also note that 4 x Z(4430) tetraquakes plus 40 MeV (**80 archaic electrons**) more weigh 17760 MeV = 10 x **1776 MeV** and this is a **signal** for the existence of both the **top lepton** (tau) and the **archaic electron (bottom lepton)**.

1. "Hadronization", Wikipedia (2020)

2. George R. Briggs, "HCE8S theory indicates that dark neutrinos exist and are derived from dark matter tau-antitau spinless chargeless composite particles ", ViXra 1711.0455, (2017)