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On a Singular Solution in Higgs Field (1)- Basic equation and structure for SM Higgs boson mass KAZUYOSHI KITAZAWA, Mitsui Chemicals — A formula for mass of SM Higgs boson (H^0) is derived by considering certain asymptotic behavior for singular solution of EOM of Higgs field via Euler-Lagrange equation, in which M_{H^0} is shown as a rest mass of Higgs boson mass of the field, which maintains Lorentz invariance. Where the asymptotic formula extracts a proper information near the singular solution. By modifying the mass formula with H^0 production scheme of W/Z-fusion process, the value of M_{H^0} is determined at 120.611 GeV/c^2. Then the mass structure of H^0 is discussed by top quark decay processes in electroweak and quark sectors with newly enlarged equation of motion (Non-Linear Klein- Gordon), calculating the mass value of top quark as 171.266 GeV/c^2. And from the difference between the value by assuming that H^0 is a virtual bound state of top quark- pair ($(t\bar{t})^*$) itself with the mass formula obtained by requirement of minimal mass production and the theoretical mass value of H^0 (120.611 GeV/c^2), it is expected that H^0 is to be a composite scalar meson after emitting one photon from the $(t\bar{t})^*$ through radiative decay. Finally, a mass structure of H^0 which is composed of all spin 0 mesons' masses, is proposed. Where the truncated-Octahedron mass structure is recursively (doubly) seen.

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