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On a singular solution in Higgs field (6) – A long time behavior of the candidate for dark energy

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A long time behavior of the candidate for dark energy which satisfies the latest result of WMAP (9 Years: $\Omega\Lambda$=0.721±0.025) and is considered as one of the degenerates 1) of ur-Higgs boson which has appeared as a mother for SM Higgs boson 2), is studied. It is shown that such a dark energy of almost non-mass fullerene will disrupt gradually into smaller ones consist of several σ mesons by collisions with another fullerene, which have also a fewer ω mesons inside than before collision. Then it could be expected that the working force to expand the volume of universe is thought to be the result of these fullerenes' mutual repulsive strong force between respective ω mesons, which will rise as soon as they (smaller fullerenes) approach very near each other. Where we regard the fullerene as a finite nucleus of the limit of m(p, n)$\longrightarrow$0 in mean-field Dirac equation with σ-ω model. Hence by schematically describing a detailed disruption-behavior in long time of the non-mass fullerene, we try to explain the observed accelerating expansion of the universe with the scale factor (a) in Robertson-Walker metric. It is noted that the accelerating expansion will continue until number of ω meson in the disrupted fullerene becomes around one or zero; then the expansion slows down and at last the contraction of universe begins after equilibrium by central gravity which may feel effective mass of σ potential, with some quasi-static clustering of the disrupted fullerenes under attractive force between their σ mesons.

1) K.K., EPS HEP 2013 (to be presented).
2) K.K., 51st BORMIO Meeting 2013; to be, PoS(Bormio 2013)008.

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