

Response to the last referee comments
of the manuscript

Jülich, 23 July 2018

”Acceleration in a Fundamental Bound State Theory and the Fate of Gravitational Systems”

Response to Ref. 1: File Rev_JAMCS_42590_Naj_v1

Point 1: Second line in the introduction related to the Standard Model is modified according to the referee’s suggestion, one reference is added.

Point 2: I really think that more than 20 external parameters are needed in the SM, see e.g. ref. 2, chapter 15. Grand Unified Theories, second paragraph: ”The SM has 19 arbitrary parameters; their values are chosen to fit the data. ... there are at least 9 additional parameters in the neutrino sector ...”.

Point 3: The beginning of the second paragraph of the introduction (related to higher order Lagrangians) is reworded.

Point 4: The beginning of the forth paragraph of the introduction (related to gravitation) is clarified, one reference is added.

All comments of the referee, in particular the first ones, have been very useful to make this manuscript clearly understandable.

Response to Ref. 3: File Rev_JAMCS_42590_Moh_v1

The referee's comments are the same as before. To address his point on the support of our work from the standard model, I added after the first paragraph of sect. 2: Interestingly, by assuming $D_\nu D^\nu = 1$ the QED Lagrangian is restored, giving rise to the Coulomb potential $V_{coul}(r) = \alpha \hbar / r$ and the correct binding of atomic states. In the present theory the atomic binding energies are also reproduced [6], but in a rather complex way, satisfying a linear quantum condition on the radius. Further, the electric fine structure constant $\alpha \sim 1/137$ is reproduced by the sum of equivalent first order coupling constants.

Hans-Peter Morsch