Contribution ID: **405** Type: **Talk in the parallel session**

Renormalization, running couplings and decoupling for the Yukawa model in curved spacetime

Monday, 5 July 2021 17:50 (20 minutes)

Following the method presented in the talk "Extended DeWitt-Schwinger subtraction scheme, heavy fields and decoupling [1]", we consider the renormalization of the one loop effective action for the Yukawa interaction with a background scalar field in curved spacetime [2]. We compute the beta functions and discuss the decoupling in the running of the coupling constants. For the case of a quantized scalar field, all the beta function are compatible with the decoupling of heavy massive fields, including also the gravitational ones. For a quantized Dirac field, decoupling appears for all the beta functions except for the anomalous result of the mass of the background scalar field.

[1]A. Ferreiro and J. Navarro-Salas, Phys. Rev. D 102, 045021 (2020).
[2] A. Ferreiro, S. Nadal-Gisbert and J. Navarro-Salas. arXiv:2104.14318 (2021)

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