

Institut Ruđer Bošković
ZAVOD ZA TEORIJSKU FIZIKU
Bijenička c. 54
ZAGREB, HRVATSKA

SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

(Zajednički seminari Zavoda za teorijsku fiziku,
Zavoda za eksperimentalnu fiziku IRB-a i Fizičkog odsjeka PMF-a)

Perturbative reduction of derivative order in EFT

Dražen Glavan

Faculty of Physics, University of Warsaw

Datum: srijeda, 14. ožujka 2018.

Vrijeme : **14 sati c.t.**

Mjesto: IRB, predavaona I krila

Abstract:

Higher derivative corrections are ubiquitous in effective field theories, which seemingly introduces new degrees of freedom at successive orders. This is actually an artifact of the implicit local derivative expansion defining effective field theories. We argue that higher derivative corrections that introduce additional degrees of freedom should be removed and their effects captured either by lower derivative corrections, or special combinations of higher derivative corrections not propagating extra degrees of freedom. Three methods adapted for this task are examined and field redefinitions are found to be most appropriate. First order higher derivative corrections in a scalar tensor theory are removed by field redefinition and it is found that their effects are captured by a subset of Horndeski theories. A case is made for restricting the effective field theory expansions in principle to only terms not introducing additional degrees of freedom.

Voditelj seminara:
Andjelo Samsarov
(asamsarov@irb.hr)