

Off-shell renormalization of spontaneously broken effective gauge theories

Thursday, September 12, 2019 5:00 PM (25 minutes)

The consistent recursive subtraction of UV divergences order by order in the loop expansion for spontaneously broken effective gauge theories with higher dimension derivative operators is presented. The Slavnov-Taylor identity is solved to all orders in the loop expansion by homotopy techniques and a suitable choice of invariant field coordinates (named bleached variables) for the linearly realized gauge group. This allows one to disentangle the gauge-invariant contributions to off-shell 1-PI amplitudes from those associated with the gauge-fixing and (generalized) non-polynomial field redefinitions (that do appear already at one loop). Explicit examples for dimension-6 operators are presented.

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