

Wilson is not anomalous: on gauge anomalies in SMEFT

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Can higher-dimensional operators in an EFT generate gauge anomalies if the renormalizable part of the EFT is anomaly-free? When are certain Wilson Coefficients dictated by the global anomalies of the UV sector? These 2 questions, which cover both directions in the relationship between anomalies and Wilson Coefficients, can be answered with similar techniques. Here, I will discuss whether dimension-6 operators in SMEFT can induce gauge anomalies. We find a negative answer, contrarily to what was claimed by Cata et al in a recent paper (2011.09976) and therefore I'll discuss why the triangle-diagram computations performed in the aforementioned paper lead to apparent anomalies. I will explain how to compute these anomalies in EFTs with a toy model and show how to obtain the same conclusion using a bosonic EFT. The latter technique is the one I'll apply to SMEFT. Based on 2012.07740.

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