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WITHDRAWN (G*) Up-to Quadratic and Reducible Two Loop Level Full Electroweak e-p Scattering with Covariant Approach

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In order to search for the physics beyond the Standard Model at the precision frontier, it is sometimes essential to account for Next-to-Next- Leading Order (NNLO) theoretical corrections. Using the covariant approach, we calculated the full electroweak leptonic tensor up to quadratic (one loop squared) and reducible two loop level NNLO ($\alpha 3$) order, which can be used for the processes like e−p and μ− p scattering relevant to EIC, MOLLER (background studies) and MUSE experiments, respectively. In the covariant approach, we apply unitary cut of Feynman diagrams and separate them into leptonic and hadronic currents and hence, after the squaring matrix element, we can obtain differential cross section up to NNLO level.

In this presentation, I will quickly review covariant approach and provide our latest results for quadratic and reducible two loop level QED and Electroweak corrections in case of e−p scattering process.

Keyword-1

Leptonic Tensor

Keyword-2

Covariant Approach

Keyword-3

Reducible Two loop

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