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Numerical Implementation of the Loop-Tree Duality

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The Loop-Tree Duality (LTD) is a novel perturbative method in QFT that establishes a relation between loop-level and tree-level amplitudes, which gives rise to the idea of treating them simultaneously in a common Monte Carlo. Initially introduced for one-loop scalar integrals, the applicability of the LTD has been expanded to higher order loops and Feynman graphs beyond simple poles. For the first time, a numerical implementation relying on the LTD was done in the form of a computer program that calculates one-loop scattering amplitudes. I will present details on the employed contour deformation as well as results for scalar and tensor integrals.

Primary authors: RODRIGO, German (CSIC); CHACHAMIS, Grigorios (IFT UAM/CSIC, Madrid); Dr MALAMOS, Ioannis (IFIC Valencia); Dr DRAGGIOTIS, Petros (Institute of Nuclear & Particle Physics NCSR "Demokritos"); BUCHTA, Sebastian (IFIC Valencia)

Presenter: BUCHTA, Sebastian (IFIC Valencia)

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