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## Trilinear Higgs Self-Couplings at $\mathcal{O}(\alpha_t^2)$ in the CP-Violating NMSSM

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In supersymmetric theories the Higgs boson masses are derived quantities where higher-order corrections have to be included in order to match the measured Higgs mass value at the precision of current experiments. Closely related through the Higgs potential are the Higgs self-interactions. In addition, the measurement of the trilinear Higgs self-coupling provides the first step towards the reconstruction of the Higgs potential and the experimental verification of the Higgs mechanism *sui generis*.

In this talk, I will present the  $\mathcal{O}(\alpha_t^2)$  corrections to the trilinear Higgs self-couplings in the CP-violating Next-to-Minimal Supersymmetric extension of the SM (NMSSM), calculated in the gaugeless limit at vanishing external momenta. The higher-order corrections turn out to be larger than the corresponding mass corrections, but show the expected perturbative convergence. The inclusion of the loop-corrected effective trilinear Higgs self-coupling in gluon fusion into Higgs pairs and the estimate of the theoretical uncertainty due to missing higher-order corrections indicate that the missing electroweak higher-order corrections may be significant.

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