Erratum: probing top-Higgs non-standard interactions at the LHC

C. Degrande,^{a,b} J.-M. Gérard,^b C. Grojean,^c F. Maltoni^b and G. Servant^{c,d}

^a*Department of Physics, University of Illinois at Urbana-Champaign,
1110 W. Green Street, Urbana, IL 61801, U.S.A.*

^b*Centre for Cosmology, Particle Physics and Phenomenology (CP3),
Chemin du Cyclotron 2, Université catholique de Louvain, Belgium*

^c*CERN Physics Department, Theory Division,
CH-1211 Geneva 23, Switzerland*

^d*Institut de Physique Théorique, CEA/Saclay,
F-91191 Gif-sur-Yvette Cédex, France*

E-mail: cdegrand@illinois.edu, jean-marc.gerard@uclouvain.be,
christophe.grojean@cern.ch, fabio.maltoni@uclouvain.be,
geraldine.servant@cern.ch

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The one-loop correction from $\mathcal{O}_{hg}$ to the operator $\mathcal{O}_{HG}$ is not finite, as previously stated, but diverges logarithmically. Its one-loop contribution can be written as

$$\delta c_{HG} = \frac{g_s y_t}{4\pi^2} \Re c_{hg} \log \left(\frac{\Lambda^2}{m_t^2} \right). \quad (1)$$

This expression should replace eq. (3.2). Consequently, eq. (3.8) should be replaced by

$$\delta c_{HG} \approx 0.1 \Re c_{hg} - 0.006 c_y. \quad (2)$$

where we have taken $m_t = 174.3 \text{ GeV}$, $m_H = 125 \text{ GeV}$, $v = 246 \text{ GeV}$, $\Lambda = 1 \text{ TeV}$ and $g_s = 1.2$ and figure 8 should be replaced by figure 1.

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Figure 1. In blue, the region allowed by the Higgs production constraints at 7 TeV for $m_H = 125$ GeV. The green lines delimit the 2 allowed tiny bands obtained if the Higgs cross-section is measured at its SM value with a precision of 20 %. The yellow region is obtained by assuming a 40% precision on the $t\bar{t}h$ cross-section at 14 TeV with the measured central value matching the SM prediction and $c_G = 0$. The three plots correspond respectively to $c_y(\text{TeV}/\Lambda)^2 = 0, -4, +5$. The upper plots are obtained when neglecting the $\mathcal{O}(1/\Lambda^4)$ terms in the $t\bar{t}H$ cross section. The bottom plots instead include these higher order terms.