Erratum: Diphoton Production at Hadron Colliders: A Fully Differential QCD Calculation at Next-to-Next-to-Leading Order [Phys. Rev. Lett. 108, 072001 (2012)]

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The next-to-next-to-leading-order (NNLO) results presented in Table I and Figs. 1–3 of the Letter are affected by an error in the numerical code that implements the NNLO calculation. The corrected results are reported below. Accompanying quantitative statements in the text have to be modified accordingly, as follows: two lines above Fig. 1, “of about $K \approx 1.35$. We find that about 30% of the NNLO corrections is due to the gg channel (the *box contribution* is responsible for more than half of it)” should be replaced by “of about $K \approx 1.25$. We find that about 13% of the NNLO corrections is due to the total contribution of the gg channel (which is roughly two thirds of the *box contribution*)” at the end of the second-to-last paragraph, “roughly 30%” should be replaced by “roughly 20%”; and in the middle of the last paragraph, “of about 30%–40%” should be replaced by “of about 20%–30%”.

TABLE I. Cross sections for $pp \rightarrow \gamma\gamma + X$ at the LHC ($\sqrt{s} = 14$ TeV), including uncertainties of the numerical calculation. The applied cuts are described in the text.

σ (fb)	LO	NLO	NNLO
$\mu_F = \mu_R = M_{\gamma\gamma}/2$	5045 ± 1	26581 ± 23	42238 ± 330
$\mu_F = \mu_R = M_{\gamma\gamma}$	5712 ± 2	26402 ± 25	40269 ± 250
$\mu_F = \mu_R = 2M_{\gamma\gamma}$	6319 ± 2	26045 ± 24	38901 ± 310

FIG. 1. Invariant mass distribution of the photon pair at the LHC ($\sqrt{s} = 14$ TeV): LO (dots), NLO (dashes), and NNLO (solid) results with corresponding statistical uncertainties of the Monte Carlo integration. We also present the results of the box and NLO + box contributions. The inset plot shows the corresponding K-factors.

FIG. 2. Transverse-momentum distribution of the harder (left) and softer (right) photon at the LHC (notation as in Fig. 1).

FIG. 3. Same as Fig. 1, but for Tevatron kinematics (as described in the text).