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Editorial note to

"Regional modelling of polycyclic aromatic hydrocarbons: WRF-Chem-PAH model development and East Asia case studies" published in Atmos. Chem. Phys., 17, 12253–12267, 2017

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The article "Regional modelling of polycyclic aromatic hydrocarbons: WRF-Chem-PAH model development and East Asia case studies" by Mu et al. published in Atmos. Chem. Phys., 17, 12253–12267, https://doi.org/10.5194/acp-17-12253-2017, 2017 has been retracted.

We were notified of issues with the above paper. After consultation with the authors we received the following statement from the corresponding authors Yafang Cheng and Gerhard Lammel:

In the article "Regional modelling of polycyclic aromatic hydrocarbons: WRF-Chem-PAH model development and East Asia case studies" (Mu et al., 2017), some quotations and a source of model input parameters in the introduction and model description have not been properly cited. The shortcomings are related to quotations and model input parameters from Galarneau et al. (2014), Zhang et al. (2011a, b), and Gencarelli et al. (2014). These studies have been referenced in the manuscript but were not correctly cited throughout the text. Furthermore, references to Lowe et al. (2015) and Hansen et al. (2004) were missing.

The first author of the article, Qing Mu, is deeply sorry and apologizes for the mistakes she made by inappropriate quotations and missing citations. We apologize for not having detected the mistakes prior to publication and we sincerely regret the shortcomings of the published manuscript. The re-sults and conclusions of the study, however, remain unaffected.

According to the guidelines provided by the "Committee on Publication Ethics" (COPE) and related consultations, the shortcomings of the article could be handled by adding a corrigendum that includes a list of all corrections as given below and a corrected version of the entire manuscript. This approach would have been preferred by some co-authors, while others preferred a retraction of the article. Overall, a retraction appears to be the most rigorous and straightforward way to correct the mistakes. Thus, we ask for a retraction of the article and will consider re-publication of the scientific contents in an appropriate form.

Corrections

1. In Paragraph 2 of Sect. 1 a citation to Zhang et al. (2011a) should be added: "According to Zhang and Tao (2009), *and Zhang et al. (2011a), . . .*"

2. Paragraph 3 of Sect. 1 should have cited the work of Galarneau et al. (2014) as follows: "*As recently outlined by Galarneau et al. (2014), a wide range of different modelling approaches have been used to investigate the atmospheric fate and large-scale distribution of PAHs* (van Jaarsveld et al., 1997; Halsall et al., 2001; Yaffe et al., 2001; Prevedouros et al., 2004; Aulinger et al.,

2007; Sehili and Lammel, 2007; Lang et al., 2007, 2008; Prevedouros et al., 2008; Lammel et al., 2009; Matthias et al., 2009; Zhang et al., 2009, 2011a, b; Bieser et al., 2012; Friedman and Selin, 2012; Inomata et al., 2012, 2013; San José et al., 2013; Friedman et al., 2014a, b; Shen et al., 2014; Galarneau et al., 2014; Efstathiou et al., 2016; Shrivastava et al., 2017). . . . ''

3. Paragraph 1 of Sect. 2 should be adjusted and a citation to Lowe et al. (2015) should be added as follows: "*As described in earlier studies like Lowe et al. (2015), the WRF-Chem model* is built on the Advanced Research WRF core, which handles the dynamics, physics, and transport processes."

4. Paragraphs 2 and 3 of Sect. 2.2.3 should have cited the work of Galarneau et al. (2014) as follows:

   (Eq. 2) . . . "*Here f_{oc} and f_{bc} are the mass fractions of* organic carbon (OC) *and BC in the particulate matter; ρ_{oct} is the density of octanol (0.82 kg L^{-1}) and K_{OA} is the octanol–air partitioning* coefficient (Odabasi et al., 2006); K_{SA} is the soot–air *partitioning* coefficient (L kg^{-1}); $\sum c_p$ is the particulate PAH concentration *integrated over the aerosol size distribution (ng m^{-3}); c_{TSP} is the total suspended particulate concentration μg m^{-3}); c_g is the PAH gas-phase concentration (ng m^{-3}). The factor of 1.5 is assumed to convert the mass concentration of* OC *into that of* organic matter. *For PAHs, K_{SA} values are not directly available from experiments, but can be calculated as the ratio of* soot–water *partitioning coefficient K_{SW} to the* air–water *partitioning coefficient K_{AW} (Galarneau et al., 2014). For this purpose, we adopted K_{SW} values from Galarneau et al. (2014), who had derived these values from K_{SW} values reported for different combustion technologies (Jonker and Koelmans, 2002) in combination with the emission inventory of Galarneau et al. (2007), and K_{AW} values from Bamford et al. (1999) (Table 1).*"

5. Paragraph 1 of Sect. 2.2.4 should have cited Hansen et al. (2004) as follows: "Air-soil gas exchange is parameterised following Strand and Hov (1996), which is based on Jury et al. (1983) *and has also been described by Hansen et al. (2004) as follows:* "

6. Paragraph 1 of Sect. 2.2.5 should have cited Gencarelli et al. (2014) as follows: "*As described in earlier studies like Gencarelli et al. (2014)*, dry deposition of gas-phase species in WRF-Chem is treated using the standard resistance approach (Wesely, 1989)."

7. Paragraph 2 of Sect. 4.1 should have cited Gencarelli et al. (2014) as follows: "*As outlined in earlier studies like Gencarelli et al. (2014), the scheme* describes vertical sub-grid-scale fluxes due to eddy transport in the whole atmospheric column, while the horizontal eddy diffusivity is calculated with a Smagorinsky-first-order closure."

8. Paragraph 1 of Sect. 4.3 should have cited Zhang et al. (2011b) as follows: ". . . , the spatial distribution of PAH concentrations in the atmosphere is dominated largely by local emissions (Hafner et al., 2005; *Zhang et al., 2011b*) and the concentration of PAH decreases rapidly away from the source regions."

9. Table 1 should have cited "*Galarneau et al. (2014)*" instead of "Jonker and Koelmans (2002)" for the soot-water partitioning coefficient K_{SW}.

Additional References

Hansen, K. M., Christensen, J. H., Brandt, J., Frohn, L. M., and Geels, C.: Modelling atmospheric transport of α-hexachlorocyclohexane in the Northern Hemisphere with a 3-D dynamical model: DEHM-POP, Atmos. Chem. Phys., 4, 1125–1137, https://doi.org/10.5194/acp-4-1125-2004, 2004.

Lowe, D., Archer-Nicholls, S., Morgan, W., Allan, J., Utembe, S., Ouyang, B., Aruffo, E., Le Breton, M., Zaveri, R. A., Di Carlo, P., Percival, C., Coe, H., Jones, R., and McFiggans, G.: WRF-Chem model predictions of the regional impacts of N_2O_5 heterogeneous processes on night-time chemistry over north-western Europe, Atmos. Chem. Phys., 15, 1385–1409, https://doi.org/10.5194/acp-15-1385-2015, 2015.

Yafang Cheng and Gerhard Lammel confirmed that all coauthors agree with the retraction of this article.