Correction to: A source biasing and variance reduction technique for Monte Carlo radiation transport modeling of emission tomography problems

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In the original article, Equation 4 was incorrectly published. The correct equation is provided in this correction.

$$F_{v,cyl} = \frac{2r_1^2}{RH} + \frac{4r_1^3}{3R^2H} \quad (4)$$

Since Eq. 4 was used to form Figs. 4 and 5, the conical correction factor values in Figs. 4 and 5 were overestimated. The new figures below account for the correction in Eq. 4. Note that this correction only applies to the conical approximation of the characteristic volume.

The 0.5-MeV photopeak has an associated ratio of 0.79 ± 0.03 . The 0.606-MeV photopeak has a ratio of 0.80 ± 0.08 . The 0.669 photopeak has a ratio of 0.81 ± 0.07 . The 0.761-MeV photopeak has a ratio of 0.79 ± 0.03 . The 0.768-MeV photopeak has a ratio of 0.81 ± 0.02 . The 0.802-MeV photopeak has a ratio of 0.63 ± 0.05 . The 1.6-MeV photopeak has a ratio of 0.98 ± 0.1 .

The characteristic volume correction factor for a conical geometry will underestimate the count rate of the photopeaks by approximately 18%. This is still the preferred of the two characteristic volume factors as the conical factor does overestimate by approximately 45% in each of the peaks.

The original article can be found online at <https://doi.org/10.1007/s10967-019-06457-1>.

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Fig. 4 Ratio of the photopeak areas for each transport method for seven high-intensity photopeaks at their corresponding decay energies. The ratios are calculated using both the truncated cone normalization and the cylindrical normalization for a 1-mm-aperture collimator

Fig. 5 Comparison between isotropic and monodirectionally biased (post-normalization) count rates as a function of aperture radii. Each data marker indicates a photopeak. Ratios for the seven strong photopeaks are shown in each cluster