In our recent article\textsuperscript{1} we used the wrong downward velocity distribution of electrons entering the simulation domain. We did not take into account that faster moving particles are more likely to cross a boundary than slower moving ones. Therefore, we assumed that the velocity distribution would be Gaussian. However, the correct initial downward velocity $h'(0)$ should be distributed proportional to $-h'(0) \cdot \exp\left(-\frac{h'(0)^2}{2\sigma^2}\right)$. The extra $h'(0)$ accounts for the fact that relatively more fast than slow electrons cross over the domain edge. The fast electrons also spend less time at each position. Therefore this probability distribution results in a gaussian velocity distribution near the simulation edge, as one would expect for a plasma. With this new initial condition, the floating potential becomes more negative (black line figure 1), close to the analytical value (horizontal black dashed line), compared to our article (red dashed line).

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Final conclusions from our article are not influenced by this error, because the lower initial velocity is roughly compensated by the higher surface potential, and therefore the lower electron deceleration towards the surface. This leaves the main end-results largely unaltered. Only for figure 9, 11 and 13, the floating potential is shifted, as explained above. New simulations have shown, that the new particle charge at the new floating potential deviates less than 20 \% from the old particle charge at the old floating potential. Therefore all conclusions remain intact, including that a particle on a substrate at the floating potential in a plasma will charge negative to a much higher charge density than the substrate.

\textsuperscript{1}Heijmans, L. C. J. and Nijdam, S. Dust on a surface in a plasma: A charge simulation Phys. Plasmas 23, 043703 (2016)