Erratum: Accurate modeling of the hose instability in plasma wakefield accelerators

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We would like to correct a typographical error which was introduced in Eqs. (5), (11), (14), (20a), and (20b) during revision of Ref. 1. The series expansion of the plasma-electron phase space density to the first order of \( \langle x \rangle \) and \( \langle p_x \rangle \) [Eq. (5) in Ref. 1] correctly reads

\[
fp = f_{p,0} - \cos \theta (\langle x \rangle \partial_r + \langle p_x \rangle \partial_{p_x}) f_{p,0}.
\]

The zeroth-order term, \( f_{p,0} \), was not printed in Ref. 1. Accordingly, the correct expansion of the wakefield potential [Eq. (11) in Ref. 1] is

\[
\Psi(r,\theta) \simeq \Psi_0 (r) - \cos \theta X_p \partial_r \Psi_0 (r),
\]

the correct expansion of the source term of the wakefield potential [Eq. (14) in Ref. 1] is

\[
S(r,\theta) \simeq S_0 (r) - \cos \theta X_p \partial_r S_0 (r),
\]

and the correct expansions of the force terms [Eqs. (20a) and (20b) in Ref. 1] are

\[
F_{r,b} \simeq F_{r,b,0} - \cos \theta X_b \partial_r F_{r,b,0}, \\
F_{r,p} \simeq F_{r,p,0} - \cos \theta \langle x \rangle \partial_r F_{r,p,0}.
\]

The zeroth order terms in Eqs. (5), (11), (14), (20a), and (20b) are missing in the printing of Ref. 1 but were fully taken into account for the calculation of all derived equations of the mathematical model.

The developed mathematical model and physical conclusions in Ref. 1 are therefore all unaltered by, and consistent with, the above corrections.

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