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Author Correction: Electron energy increase in a laser wakefield accelerator using up-ramp plasma density profiles

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This Article contains errors. In the Introduction,

“Plasma frequency is defined by the formula $\omega_p = (4\pi n_0 e^2 / m)^{0.5}$ with n_0 being plasma density, m is electron rest mass and e is the elementary charge.”

should read:

“Plasma frequency is defined by the formula $\omega_p = (4\pi n_0 e^2 / m^{0.5})$ with n_0 being plasma density, m is electron rest mass and e is the elementary charge.”

Additionally, in the Discussion,

“In the PIC simulations, we applied 3 types of density profiles, shown in Fig. 2a: one trapezoidal profile with peak density 1×10^{19} electrons/cm³ (case *i*), one trapezoidal profile with peak density 1.4×10^{19} electrons/cm³ (case *iii*) and one profiles with 3 ramps (case *ii*).”

should read:

“In the PIC simulations, we applied 3 types of density profiles, shown in Fig. 2a: one trapezoidal profile with peak density 1×10^{19} electrons/cm³ (case *i*), one trapezoidal profile with peak density 1.4×10^{19} electrons/cm³ (case *iii*) and one profiles with 3 ramps (case *ii*).”

Additionally, in the Figure Legend for Figure 2

“Quasi-3D PIC simulation to show the of density ramp on the LWFA: Figure (a) highlights the initial density profiles used to simulate three cases, and (b) compares the electron energy spectrum for the three cases when the maximum energy is obtained at time $t = 1452 \omega_p^{-1}$ for case (i) and (ii), and at time $t = 1313 \omega_p^{-1}$ for case (iii). Figure (c–e) show the longitudinal phase space and electric field lineout at the axis (blue line) for the three cases at time $t = 1194 \omega_p^{-1}$.”

should read:

“Quasi-3D PIC simulation to show the effect of density ramp on the LWFA: Figure (a) highlights the initial density profiles used to simulate three cases, and (b) compares the electron energy spectrum for the three cases when the maximum energy is obtained at time $t = 1452 \omega_p^{-1}$ for case (i) and (ii), and at time $t = 1313 \omega_p^{-1}$ for case (iii). Figure (c–e) show the longitudinal phase space and electric field lineout at the axis (blue line) for the three cases at time $t = 1194 \omega_p^{-1}$.”

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Finally, in the Methods,

“Here the results are discussed for three density profiles plotted in Fig. 2(a), where in case (i) The plasma density rises to n_0 in plasma scale length $900c/\omega_p$, stay flat for $800c/\omega_p$, and drops down to 0 in next $900c/\omega_p$ plasma length. In case (ii) after reaching the density n_0 in plasma scale length $900c/\omega_p$, the electron density further grows to $1.4 n_0$ in next $800c/\omega_p$, and in case (iii) the density profile is similar to the case i, with flat density at $1.4 n_0$.”

should read:

“Here the results are discussed for three density profiles plotted in Fig. 2(a), where in case (i) The plasma density rises to n_0 in plasma scale length $900 c/\omega_p$, stays flat for $800 c/\omega_p$, and drops down to 0 in next $900 c/\omega_p$ plasma length. In case (ii) after reaching the density n_0 in plasma scale length $900 c/\omega_p$, the electron density further grows to $1.4 n_0$ in next $800 c/\omega_p$, and in case (iii) the density profile is similar to the case i, with flat density at $1.4 n_0$.”



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