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Erratum: "1.5D quasilinear model and its application on beams interacting with Alfvén eigenmodes in DIII-D" [Phys. Plasmas 19, 092511 (2012)]

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We make the following corrections to typos we found in the original paper.[1]

In the abstract, the reference is to shot #112117 not #127112 [W. W. Heidbrink *et al.*, Nucl. Fusion **48**, 084001 (2008)].

Equation (13)

For consistency, we replace the variable q by e for the charge, since q is used as safety factor elsewhere. Equation (13) therefore reads as

$$\gamma_L = \frac{\pi}{2}\int \frac{e}{c} dP_\phi dE \left| \left\langle \frac{v_d \cdot \delta E}{\omega} \right\rangle \right|^2 \delta(\Omega) \left(\omega \frac{\partial}{\partial E} + n \frac{\partial}{\partial P_\phi} \right) f,$$

where $D_k = W_k |\langle \frac{e}{c\omega} v_d \cdot \delta E \rangle|^2 \delta(\Omega)$ is the diffusion coefficient at the resonances in phase space.

Equation (17)

Equation (17) should be written as

$$\left. \frac{\partial \beta_{EP}}{\partial r} \right|_{\text{crt}} = \frac{\gamma_d}{\gamma_L'}.$$

Equation (18)

ρ in Eq. (18) is ρ_s

$$\frac{\gamma_{rad}}{\omega} = -3 \left| \frac{\sqrt{\rho_s^2}}{r\sqrt{2}} \frac{sm(m+1)}{2m+1} \right|^{0.67},$$

where s is the local shear at the location of the mode, m is the poloidal mode number, $\rho_s = c_s/\Omega_{ci}$ with $c_s = \sqrt{\gamma Z k T_e / m_i}$ is the ion sound speed, and Ω_{ci} is the ion gyro-frequency.

Equation (20)

The exponential in Eq. (20) for the electron landau damping is $-1/s$ not $1/s$. We also correct the expression for $G(\hat{\epsilon})$ and further explain some variables

$$\frac{\gamma_{eL}}{\omega} = -\frac{\pi^{3/2}}{6} q^2 \beta_e \frac{v_A}{v_e} \left(\frac{5}{2} \epsilon \right) G(\hat{\epsilon}) e^{-1/s}$$

and $G(\hat{\epsilon}) \approx 4.47 + 0.42\hat{\epsilon} + 0.02\hat{\epsilon}^2$ not $G(\hat{\epsilon}) \approx 4.47 - 0.42\hat{\epsilon} + 0.02\hat{\epsilon}^2$ as typed in the manuscript. s is the local shear $s = (r/q)\, dq/dr$, where r is the radius and q is the safety factor. $\hat{\epsilon} = 2\epsilon/(1-\epsilon)$, where $\epsilon = r/a$ with a minor radius of the plasma last close flux surface.

Equation (21)

There is a missing factor of $(\pi/2)^2$. Equation (21) should be

$$\frac{\gamma_{eColl}}{\omega} = -\frac{1}{4}\left(\frac{\pi}{2}\right)^2 \left[I_1 \left(\frac{8snq\rho_s}{5r\epsilon} \right)^2 + I_2 q^2 \frac{8\beta_{pc}}{1+\sigma} \right] \sqrt{\frac{\nu}{\omega}} \times \left[\ln\left(16\sqrt{\frac{\omega\epsilon}{\nu}} \right) \right]^{-3/2}.$$

Equation (25)

The diamagnetic frequency in Eq. (25) is

$$\omega^* = \frac{n q_m v_0^2}{r_m \Omega_c} \frac{\partial \ln \beta}{\partial r},$$

where q_m and r_m are the safety factor and radius at the location of the toroidal Alfvenic eigenmodes mode. n is the toroidal mode number and Ω_c is the fast ion cyclotron frequency.

[1]K. Ghantous, N. N. Gorelenkov, H. L. Berk, W. W. Heidbrink, and M. A. Van Zeeland, Phys. Plasmas **19**, 092511 (2012).

