# Erratum: Apparent superluminality and the generalized Hartman effect in double-barrier tunneling [Phys. Rev. E 72, 046608 (2005)]

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In the above paper, we showed that the group delay and dwell time for double-barrier tunneling were *nearly* identical except for a small oscillatory term due to self-interference. That term actually disappears in the electromagnetic case for the Fabry-Perot cavity discussed if proper account is taken of the magnetic field contribution to the stored energy. For the cavity electric field of Eq. (3),

$$E_x(z) = \sqrt{T}E_0(e^{ikz} + \sqrt{R}e^{i(2kL-kz)})/(1 - Re^{i2kL}), \tag{3}$$

the magnetic field is

$$H_y = -\frac{i}{\omega\mu}\frac{\partial E_x}{\partial z} = \sqrt{\varepsilon/\mu}\sqrt{T}E_0(e^{ikz} - \sqrt{R}e^{i(2kL-kz)})/(1 - Re^{i2kL}).$$

The time-average stored energy is $\langle U\rangle=(1/4)\int[\varepsilon|E(z)|^2+\mu|H|^2]\,d\nu$, which, using the above fields yields

$$\langle U\rangle = \frac{\varepsilon_0 ALT(1+R)|E_0|^2}{2(1+R^2-2R\cos 2kL)}.$$

Upon dividing by the incident power we obtain the dwell time

$$\tau_d = \left[\frac{1-R^2}{1+R^2-2R\cos(2kL)}\right]\frac{L}{\nu}.$$

Thus, the group delay and dwell time are, in fact, *identical* for a Fabry-Perot resonator. Figure 3 is thus valid for all values of $kL$, and not just for $kL > \pi$. This further strengthens the conclusions of the paper.

On page 5, paragraph 2, line 12, the ratio $T/\nu$ should read $\sqrt{S}/\nu$.

 