

is shown to differ solely by the Eta-Correa constant:

$$c/W_k = \eta = \sqrt{\alpha^{-1}} * 10$$

After differentiating between the **H** and **B** functions for massfree and massbound charges, we are led to conclude that whereas H^{-1} is the magnetic wavelength of massfree waves in “a vacuum”, $2\pi/B$ is the magnetic wavelength of the same waves in a “material medium”. For electronic charges in a material medium, the magnetic wavelength is then simply a function of the radial magnetic vector r :

$$2\pi(B)^{-1} = W_k/F_{\text{cyclo}} = 2\pi r$$

The findings suggest a totally new way of treating the magnetic permeability of a medium, and very different relations of the magnetic field functions to the current density terms J_{free} and J_{bound} . These functions are systematized, for both massfree and massbound charges, and contrasted to those of Maxwell and accepted electromagnetic theory. Lastly, we demonstrate how the dimensionalities of **H** and **B** are the same, ℓ^{-1} , even if one is the reciprocal of a radius and the other of a wavelength (composite or not), in contrast to the electric field **E** which is effectively a frequency function with dimensionality of τ^{-1} .