

RESULTS

The experimental results that characterize each of the TCs that we have examined (BD10A, SFTC and our TC728) in previous communications (2-3), are presented, in a summary form, in **Table 1** (the reader is also referred to **Table 4** for the physical characteristics of the TC728 coil employed in the present experiments), in aetherometric and conventional units. To understand the relations between the terms presented therein, the reader is well advised to consult the referenced papers. Our point of departure is our solution to the problem of the two magnetic field functions, **H** and **B**, such as we proposed it in the preceding communication (1), where $2\pi\mathbf{H}$ is understood as the magnetic field of the massfree aether energy in the underlying ‘vacuum state’, and **B** as the magnetic field of the same massfree energy packets in a medium that contains Matter (often referred to as a ‘material medium’). But as we saw then, and recapitulate now, there is another magnetic field **B** function, one that refers instead to the angular motion or ‘spin’ of massbound charges in material media. Accordingly, when speaking of magnetic induction field functions we should differentiate between the magnetoinductive \mathbf{B}_{MF} function of massfree electric energy, and the magnetoinductive \mathbf{B}_{MB} function of massbound electric energy or, more properly speaking, of the kinetic energy associated with that massbound charge. Likewise, when considering massbound charges in motion in ‘Space devoid of Matter’, there will be an **H** function for the kinetic energy of that motion of inert mass particles.

For the reader to comprehend what follows, it is necessary that he or she understands the new conceptualization of magnetic field functions proposed by Aetherometry.

1. Cyclotron frequency and the B fields of massfree and massbound charges

We now try to apply the AToS findings of our last communication (1) to the functioning of an induction coil, specifically our TC728. We have noted previously how, for massfree longitudinal spinning waves, the cyclotron frequency depends upon the voltage wavespeed (from now on, since aetherometric methods permit us to treat **H** and **B** as fine structure functions that are reciprocal of either wavelength or radial vectors subtended by a wavelength of a well defined wave function, we shall not bolden **H** and **B** and treat them simply as algebraic functions):

$$F_{\text{cyclo}} = \frac{W_v * B}{2\pi}$$

and how, in a “vacuum”, in space absent matter, **B** and $2\pi\mathbf{H}$ become become identical such that we can then write: