
Errata: "Cerenkov Radiation in a Magneto-Ionic Medium"

The Royal Society

Phil. Trans. R. Soc. Lond. A 1964 **256**,
doi: 10.1098/rsta.1964.0005

Email alerting service

Receive free email alerts when new articles cite this article - sign up in the box at the top right-hand corner of the article or click [here](#)

Errata to Sections 5 (b) and 5 (c) of the paper entitled
 ‘ČERENKOV RADIATION IN A MAGNETO-IONIC MEDIUM’

(*Phil. Trans. A*, **255**, pp. 585–606, 1963)

By J. F. MCKENZIE

Cavendish Laboratory, University of Cambridge

In equation (3·9) on page 592: for μ_i read μ_i^2 .

The second of equations (5·7) on page 597 should read

$$\mu' = \mu + \omega \frac{\partial \mu}{\partial \omega}.$$

Equation (5·10) is quoted as being an equation for μ_{g-r} while in fact it is the equation for the refractive index, μ , exhibiting θ_2 types of coherent angles. If the correct expression for μ_{g-r} is used and the procedure outlined in §§ 5 (b) and 5 (c) is followed, the time taken, $\tau(\omega)$, for a Čerenkov ray making an angle χ with the magnetic field to travel a distance L parallel to it, is found to be

$$\tau(\omega) = \tau_0 \left/ \left\{ 1 + \frac{\omega^2}{\omega_i^2} \left(1 - 2 \frac{\omega_i}{\omega_n} \right) \right\} \right. \quad (\tau_0 = L/v),$$

where $\omega_1 = \gamma\Omega$, $\omega_2 = \Omega(1-\gamma)$, $2\gamma = 1 - \sqrt{1 - 4v^2 p^2 / c^2 \Omega^2}$.

Figure 6 for the spectrum of frequency against time of arrival is then replaced by figure 6* below.

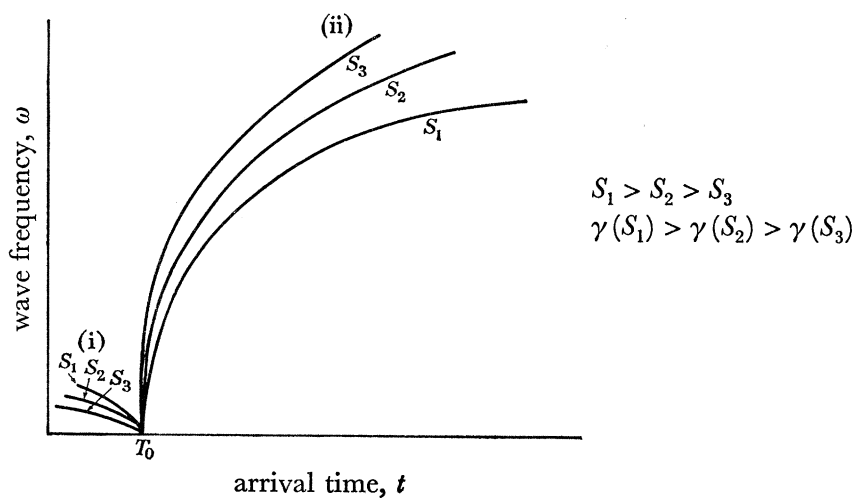


FIGURE 6*. Spectrum of frequency against arrival time. (i) Spectrum associated with θ_1 type of coherent angles. (ii) Spectrum associated with θ_2 type of coherent angles.