Излучение Черенкова

$$\mathrm{Re}\varepsilon(\omega) = \mathrm{Re}\varepsilon(-\omega) = n^2(\omega)$$

$$\varepsilon(\omega) = n^2 > \frac{c^2}{v^2},$$

$$\frac{d^2W(\omega)}{d\omega dz} = -\frac{ie^2\omega}{2\pi c^2}\left(1 - \frac{c^2}{v^2n^2}\right)\times$$

$$\left\{\int \frac{dx}{x - i\delta} - \int \frac{dx}{x + i\delta}\right\},$$

$$\frac{d^2W(\omega)}{d\omega dz} = \frac{e^2\omega}{c^2}\left(1 - \frac{c^2}{v^2n^2}\right)$$