

$$\epsilon_0 := \frac{10^{-9}}{36 \cdot \pi} \quad \mu_0 := 4 \cdot \pi \cdot 10^{-7} \quad T := .00000008 \quad \epsilon_w := 9 \quad \mu_w := 1 \quad E_0 := 1 \quad Z_0 := 120\pi$$

$$\omega := \frac{2\pi}{T} \quad \beta_0 := \omega \cdot \sqrt{\mu_w \cdot \mu_0 \cdot \epsilon_w \cdot \epsilon_0} \quad \beta_1 := \beta_0 \quad \beta_2 := \omega \cdot \sqrt{\mu_w \cdot \mu_0 \cdot \epsilon_w \cdot \epsilon_0} \quad \lambda_0 := 2 \frac{\pi}{\beta_0}$$

$$E_1(z, t) := E_0 \cdot \left[ e^{j(\omega \cdot t - \beta_1 \cdot z)} - \frac{1}{2} e^{j(\omega \cdot t + \beta_1 \cdot z)} \right]$$

$$E_2(z, t) := \frac{1}{2} E_0 e^{j(\omega \cdot t - \beta_2 \cdot z)} \quad E_{2c}(z, t) := \text{if} \left[ z < 0, 0, \frac{1}{2} \cdot E_0 \cdot (\cos(\omega \cdot t - \beta_2 \cdot z)) \right]$$

$$E(z, t) := \text{if} (z < 0, |E_1(z, t)|, |E_2(z, t)|)$$

$$E_{1p}(z, t) := \text{if} (z < 0, \cos(\omega \cdot t - \beta_1 \cdot z), E_{2c}(z, t))$$

$$E_{1o}(z, t) := \text{if} \left[ z < 0, \left( -\frac{1}{2} \cdot \cos(\omega \cdot t + \beta_1 \cdot z) \right), E_{2c}(z, t) \right]$$

$$E_{1c}(z, t) := \text{if} \left[ z < 0, \left( \cos(\omega \cdot t - \beta_1 \cdot z) + -\frac{1}{2} \cdot \cos(\omega \cdot t + \beta_1 \cdot z) \right), E_{2c}(z, t) \right]$$

$$z := -10, -9.9..10$$

$$\text{wsp\_wyk} := 100$$

wsp\_wyk - współczynnik skalujący pozwalający wyrysować E i H na 1 wykresie

$$H(z, t) := \text{if} \left[ z < 0, \left| \frac{E_0}{Z_0} \text{wsp\_wyk} \cdot \left[ e^{j(\omega \cdot t - \beta_1 \cdot z)} + \frac{1}{2} e^{j(\omega \cdot t + \beta_1 \cdot z)} \right] \right|, \left| \frac{E_0}{Z_0} \text{wsp\_wyk} \cdot \left[ \frac{3}{2} e^{j(\omega \cdot t + \beta_2 \cdot z)} \right] \right| \right]$$

$$H_p(z, t) := \text{if} \left[ z < 0, \frac{E_0}{Z_0} \cdot \text{wsp\_wyk} \cdot \left( \cos(\omega \cdot t - \beta_1 \cdot z) + \frac{1}{2} \cdot \cos(\omega \cdot t + \beta_1 \cdot z) \right), \frac{E_0}{Z_0} \cdot \text{wsp\_wyk} \cdot \left( \frac{3}{2} \cdot \cos(\omega \cdot t + \beta_2 \cdot z) \right) \right]$$

$E_{1c}(0,0) = 0.5$	$E_{1c}\left(0, \frac{T}{4}\right) = 0$	$E_{1c}\left(0, \frac{T}{8}\right) = 0.354$
$E_{1c}(-\lambda_0,0) = 0.5$	$E_{1c}\left(-\lambda_0, \frac{T}{4}\right) = 0$	$E_{1c}\left(-\lambda_0, \frac{T}{8}\right) = 0.354$
$E_{1c}\left(-\frac{\lambda_0}{2}, 0\right) = -0.5$	$E_{1c}\left(-\frac{\lambda_0}{2}, \frac{T}{4}\right) = 0$	$E_{1c}\left(-\frac{\lambda_0}{2}, \frac{T}{8}\right) = -0.354$
$E_{1c}\left(-\frac{3\lambda_0}{4}, 0\right) = 0$	$E_{1c}\left(-\frac{3\lambda_0}{4}, \frac{T}{4}\right) = 1.5$	$E_{1c}\left(-\frac{3\lambda_0}{4}, \frac{T}{8}\right) = 1.061$
$E_{1c}\left(-\frac{\lambda_0}{4}, 0\right) = 0$	$E_{1c}\left(-\frac{\lambda_0}{4}, \frac{T}{4}\right) = -1.5$	$E_{1c}\left(-\frac{\lambda_0}{4}, \frac{T}{8}\right) = -1.061$
		$E_{1c}\left(-\frac{\lambda_0}{8}, \frac{T}{8}\right) = -0.5$
		$E_{1c}\left(-\lambda_0 + \frac{\lambda_0}{8}, \frac{T}{8}\right) = 1$







