

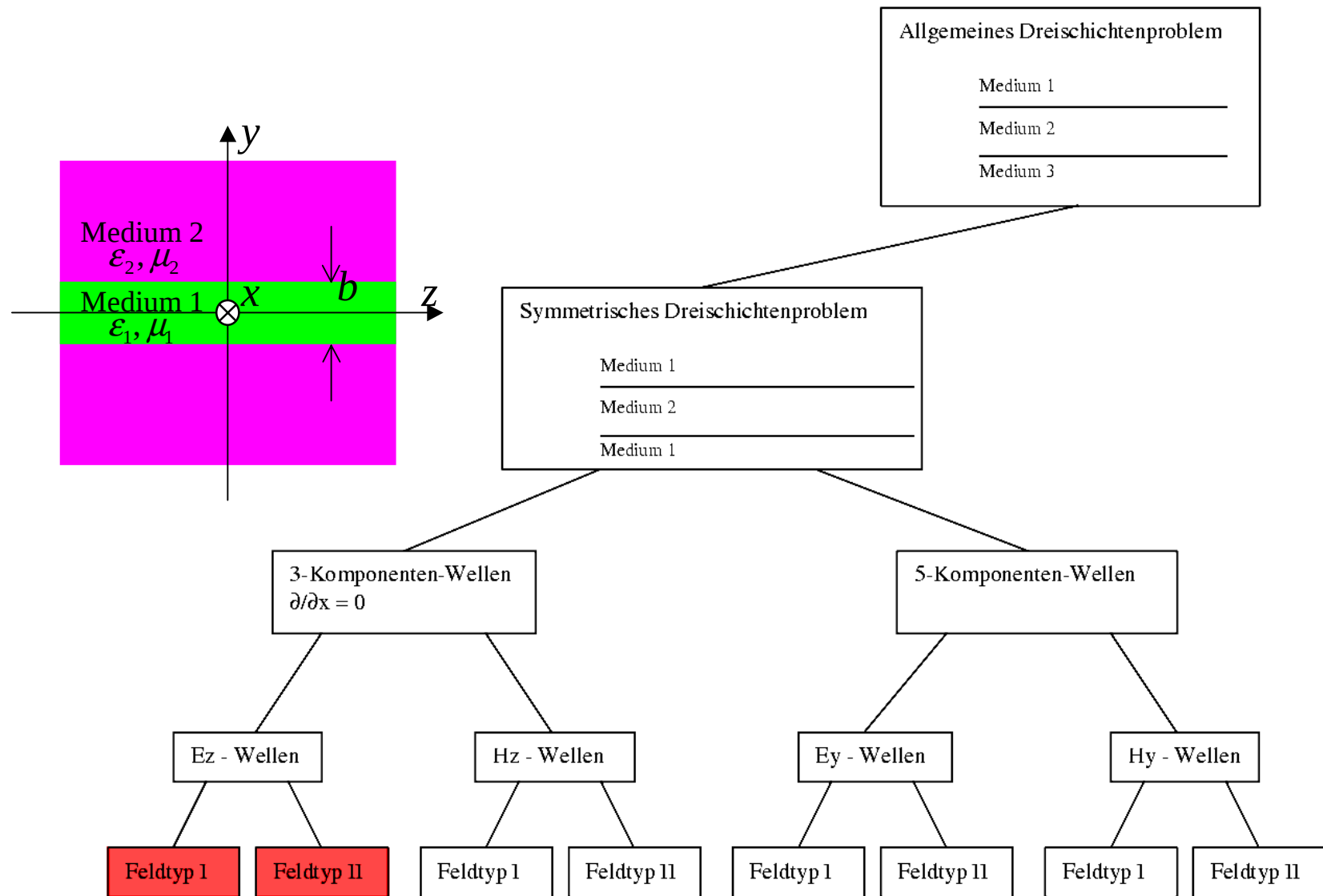


Abbildung 8.3: Superposition von 8 Teilproblemen zur allgemeinen Lösung des symmetrischen Dreischichtenproblems.

II Ez-Feldtyp I

$$H_x = \begin{cases} c_1 \overset{\text{sin}}{\cos}(k_{y1}y) \exp(-jk_z z) & \text{für } |y| \leq b/2 \\ c_2 \exp(k_{y2}y) \exp(-jk_z z) & \text{für } y > b/2 \\ \dots & \text{für } y < -b/2 \end{cases} \quad E_y = \begin{cases} c_1 \frac{-jk_z \overset{\text{sin}}{\cos}(k_{y1}y) \exp(-jk_z z)}{j\omega\epsilon_1} & \text{für } |y| \leq b/2 \\ c_2 \frac{-jk_z}{j\omega\epsilon_2} \exp(k_{y2}y) \exp(-jk_z z) & \text{für } y > b/2 \\ \dots & \text{für } y < -b/2 \end{cases}$$

$$E_z = \begin{cases} c_1 \frac{k_{y1} \overset{-\text{cos}}{\sin}(k_{y1}y) \exp(-jk_z z)}{j\omega\epsilon_1} & \text{für } |y| \leq b/2 \\ c_2 \frac{-jk_{y2}}{j\omega\epsilon_2} \exp(k_{y2}y) \exp(-jk_z z) & \text{für } y > b/2 \\ \dots & \text{für } y < -b/2 \end{cases}$$

$$\frac{bk_{y1}}{2} \tan \frac{bk_{y1}}{2} = \frac{\epsilon_1}{\epsilon_2} j \frac{bk_{y2}}{2}$$

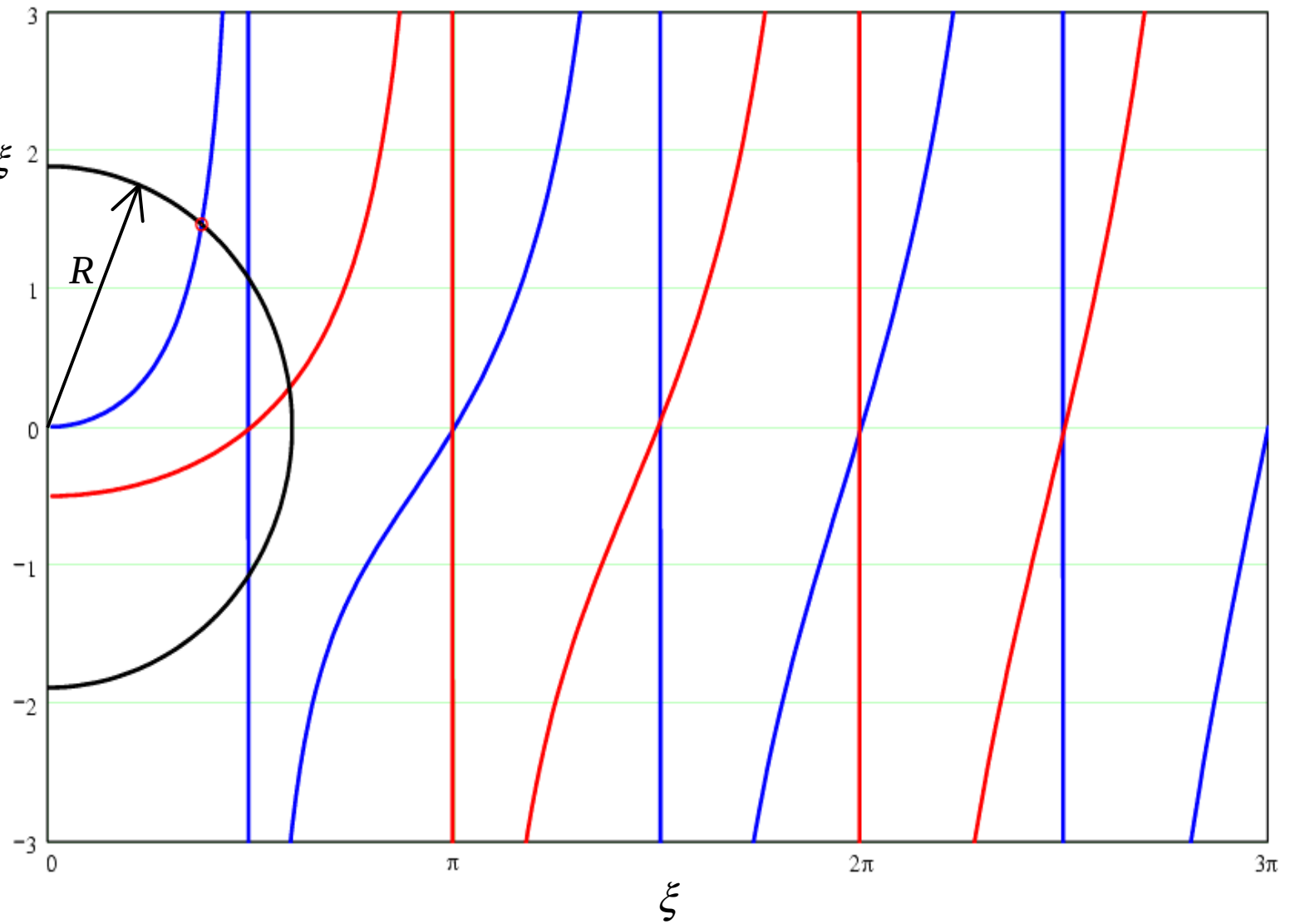
$$k_{y1}^2 - k_{y1}^2 = k_1^2 - k_2^2$$

Ez-Feldtyp I^{II}

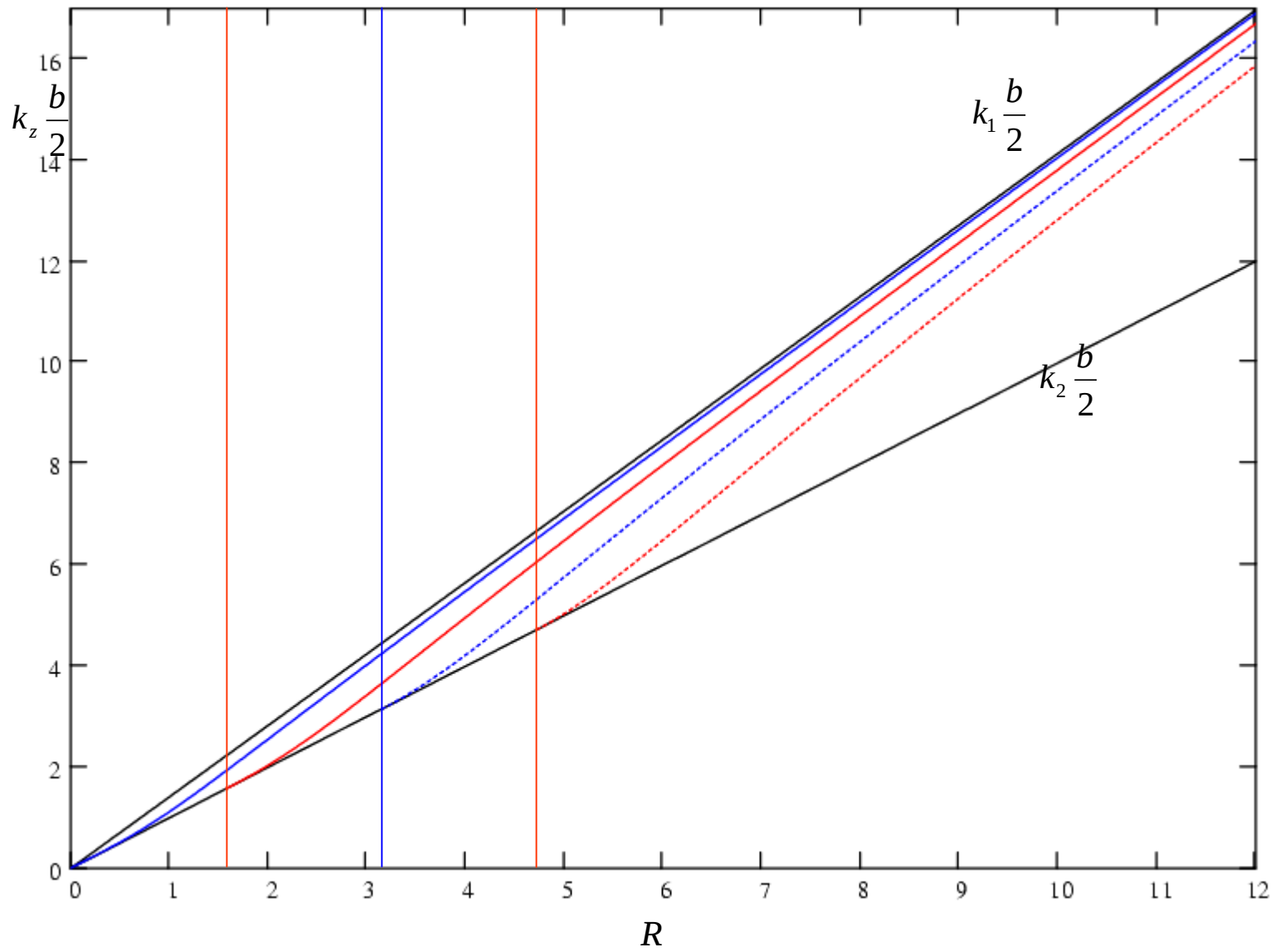
$$\eta_1(\xi) = \frac{\varepsilon_2}{\varepsilon_1} \xi \tan \xi$$

$$\eta_2(\xi) = -\frac{\varepsilon_2}{\varepsilon_1} \xi \cot \xi$$

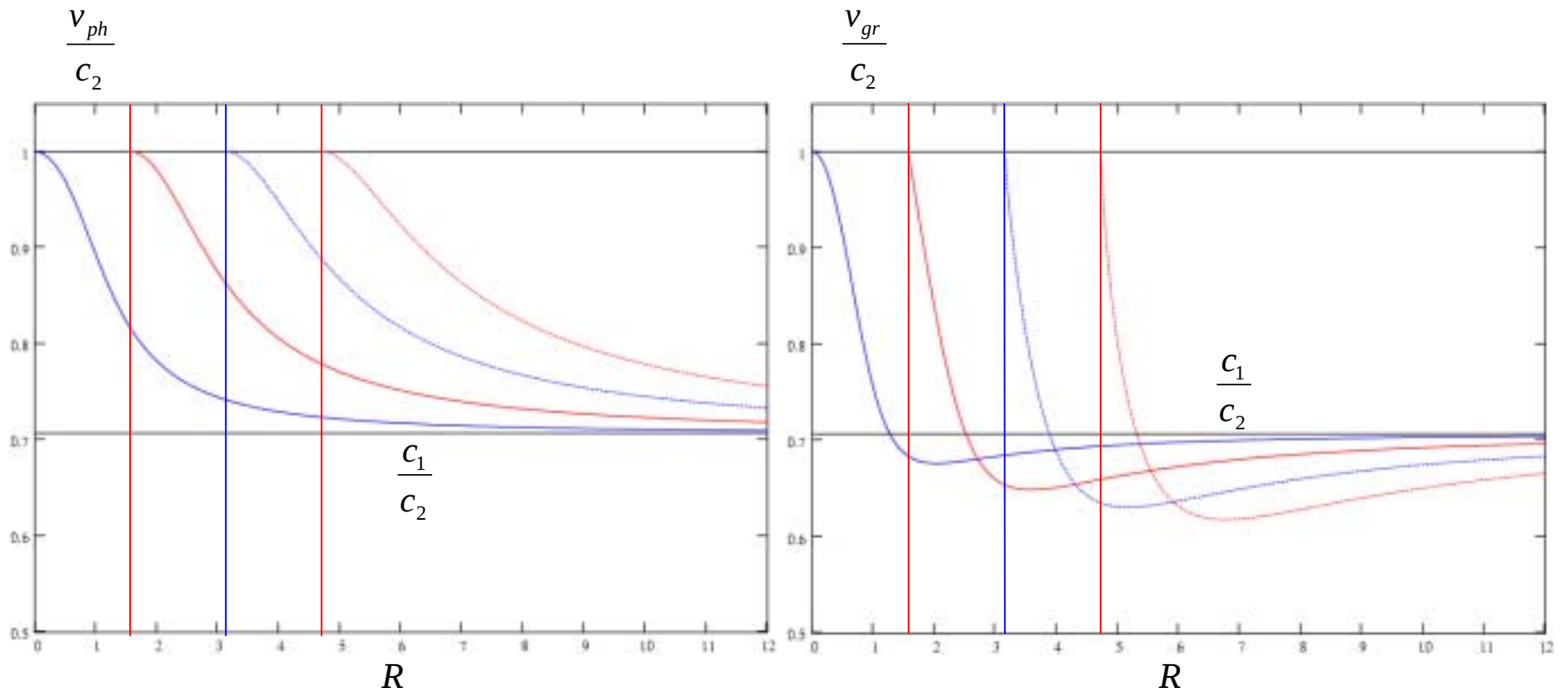
$\eta_1(\xi)$
 $\eta_2(\xi)$



Ez-Feldtyp I^{II}

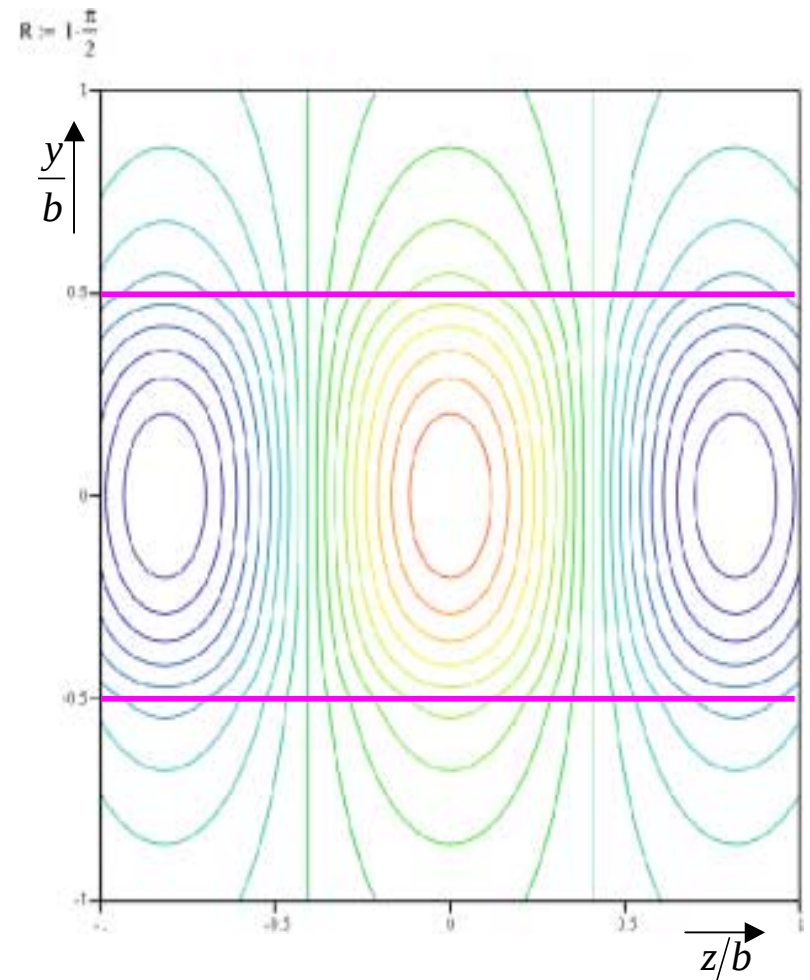
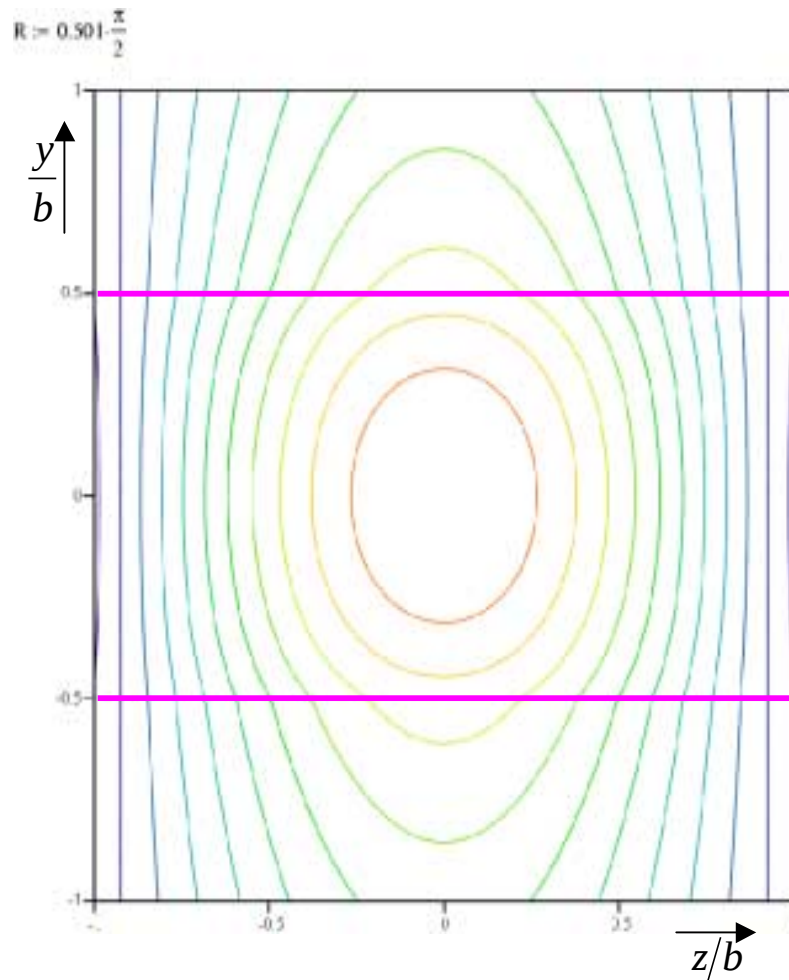


Ez-Feldtyp I^{II}

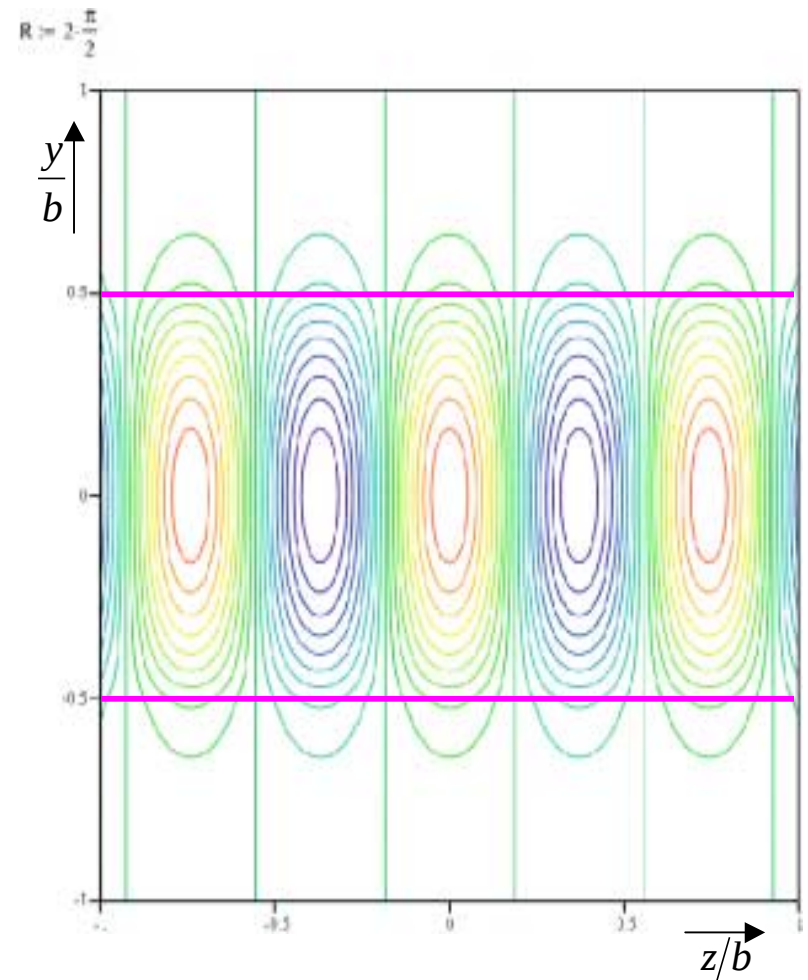
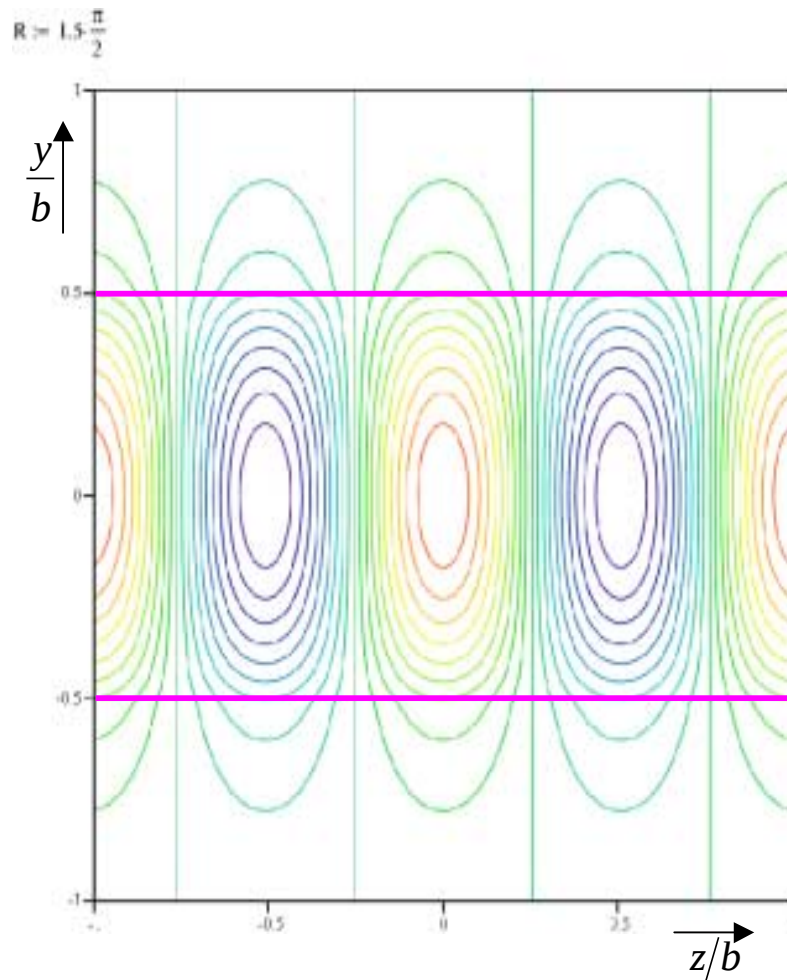


für $\frac{\epsilon_2}{\epsilon_1} = 2, \mu_1 = \mu_2$

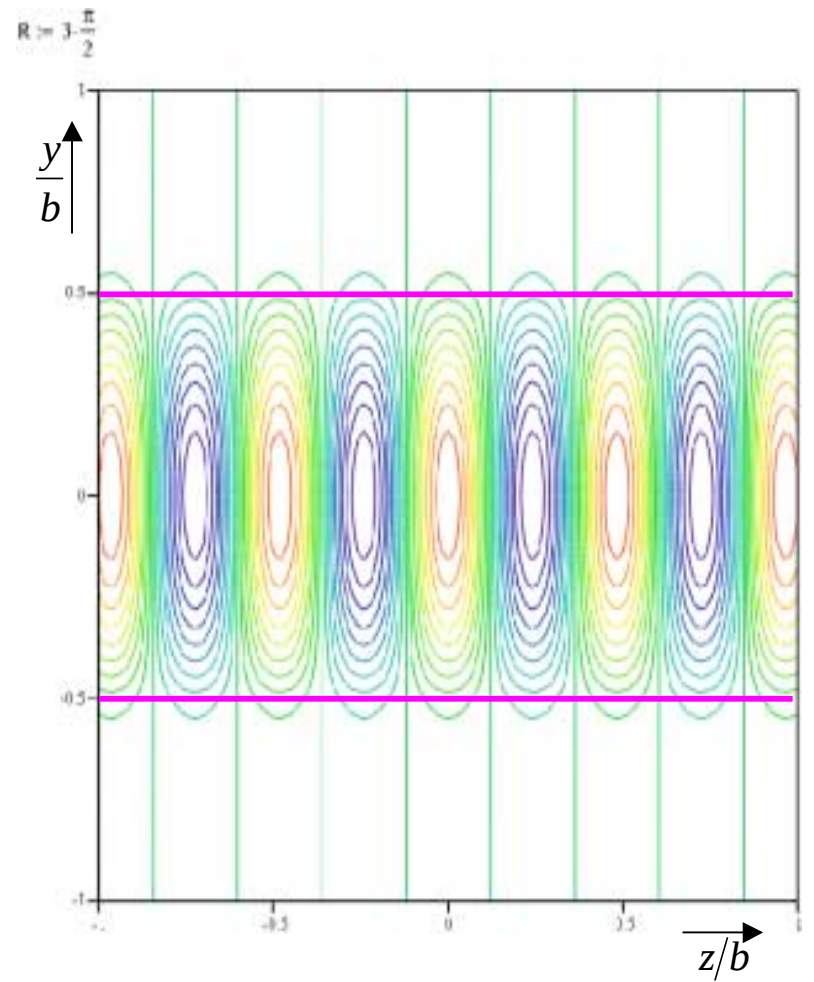
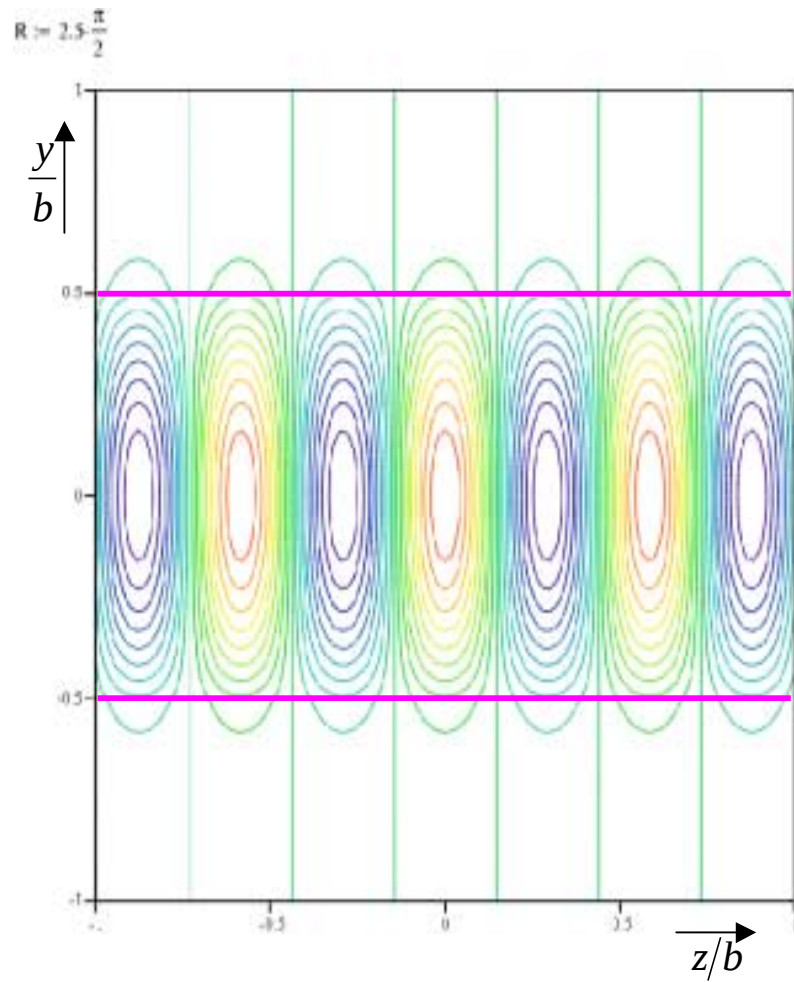
Ez-Feldtyp I



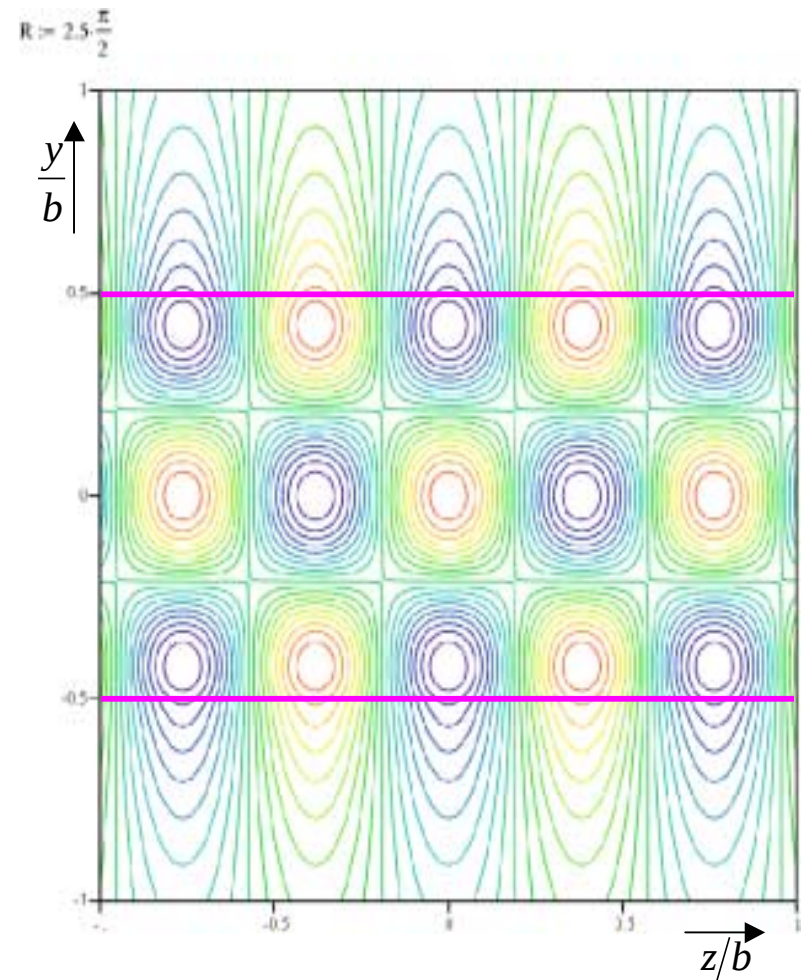
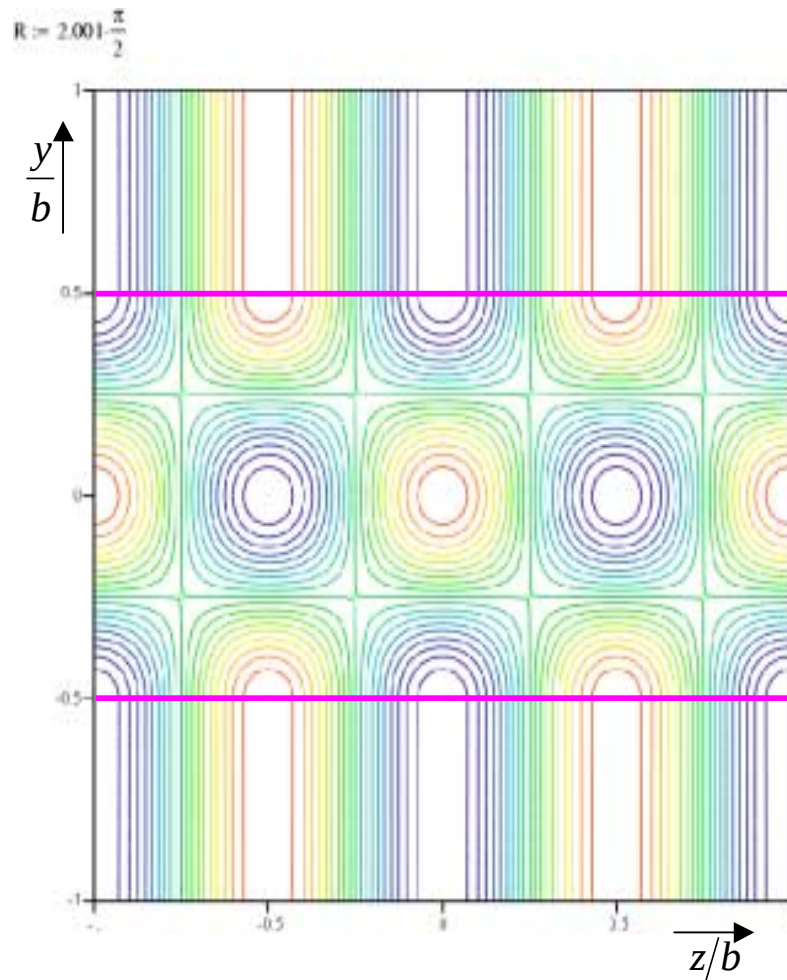
Ez-Feldtyp I



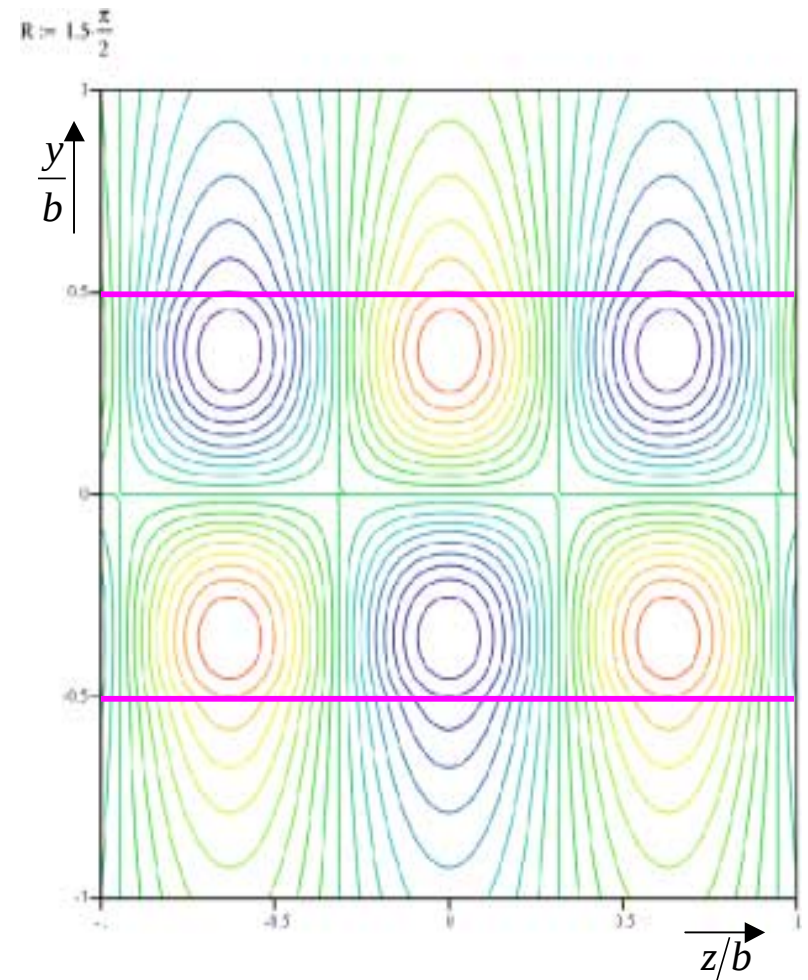
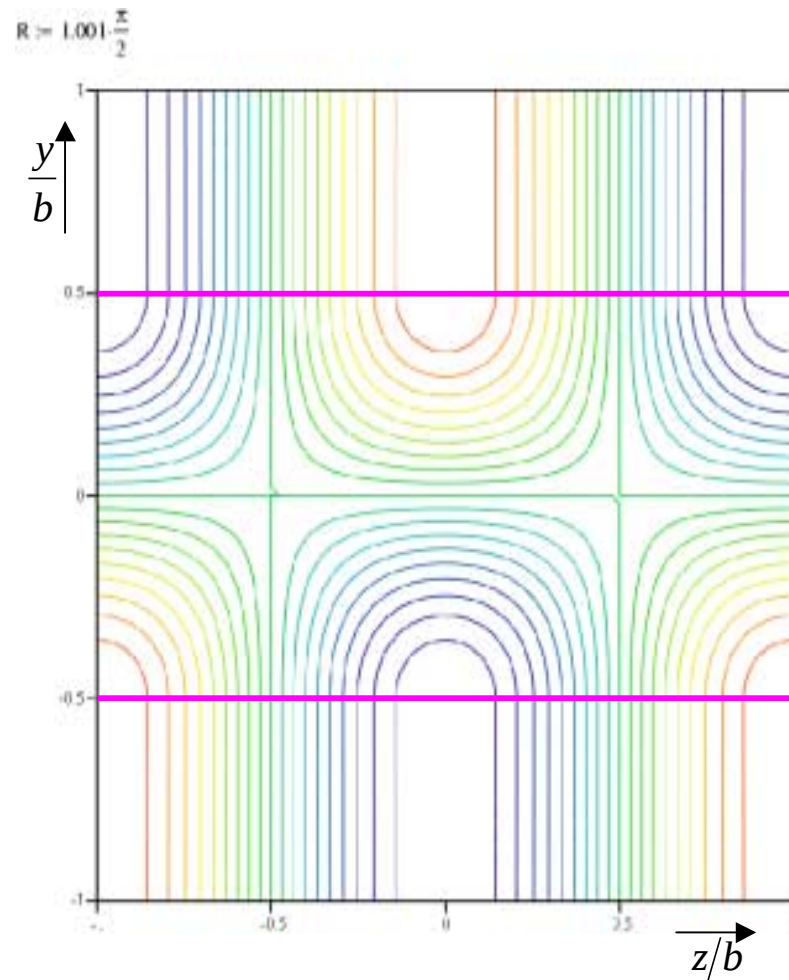
Ez-Feldtyp I



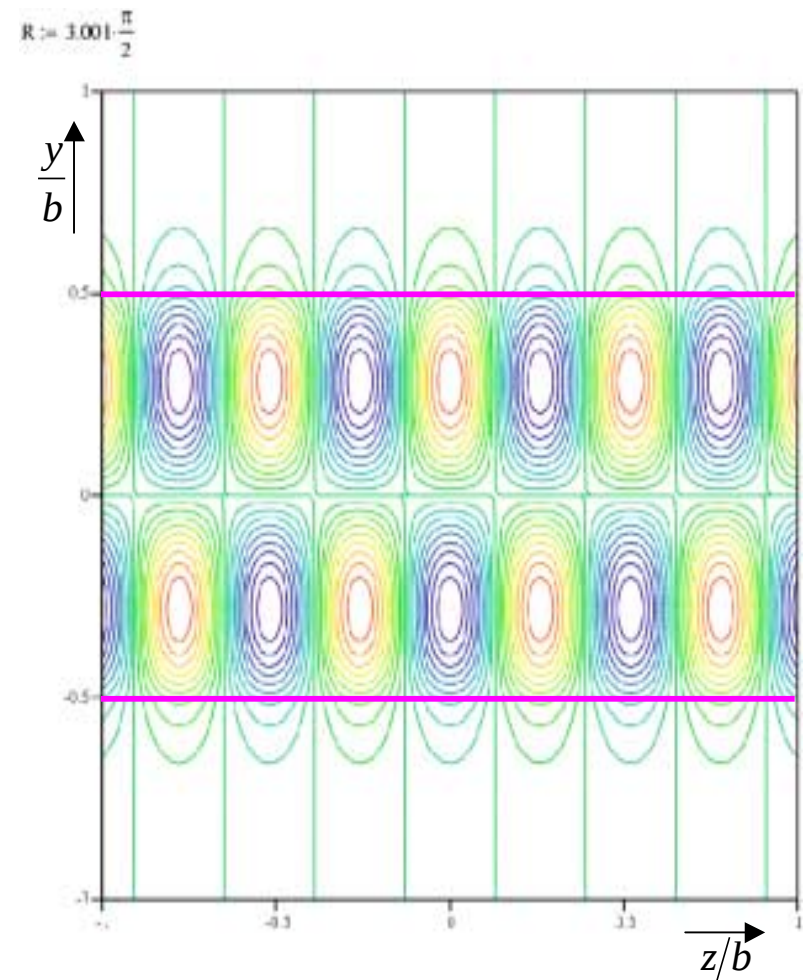
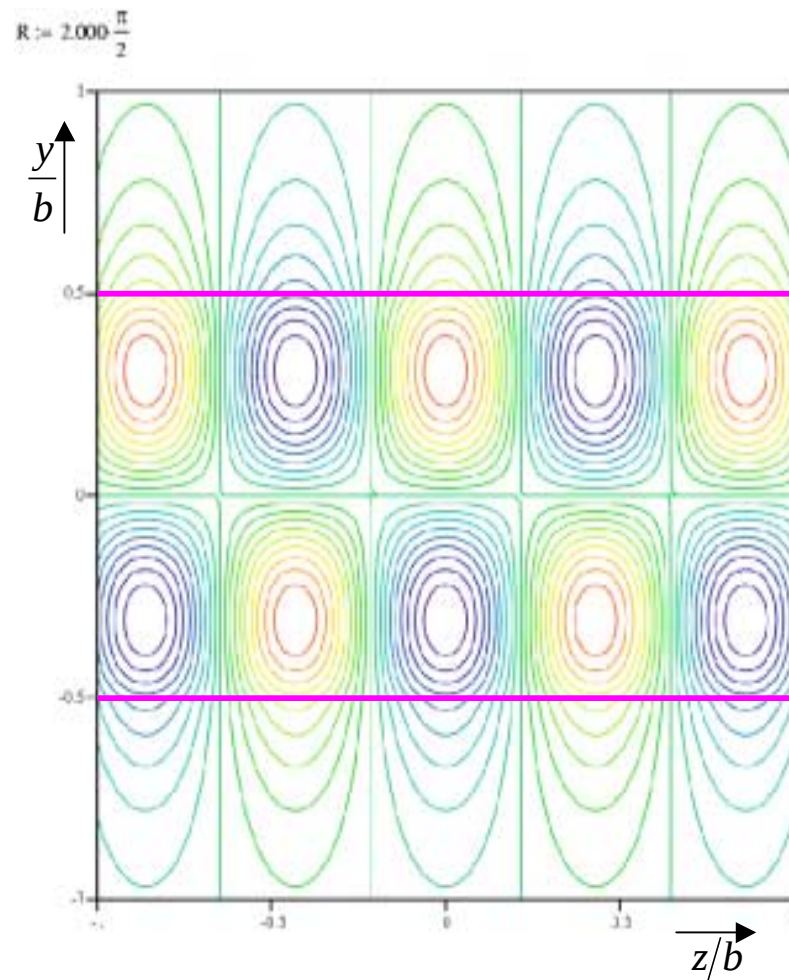
Ez-Feldtyp I



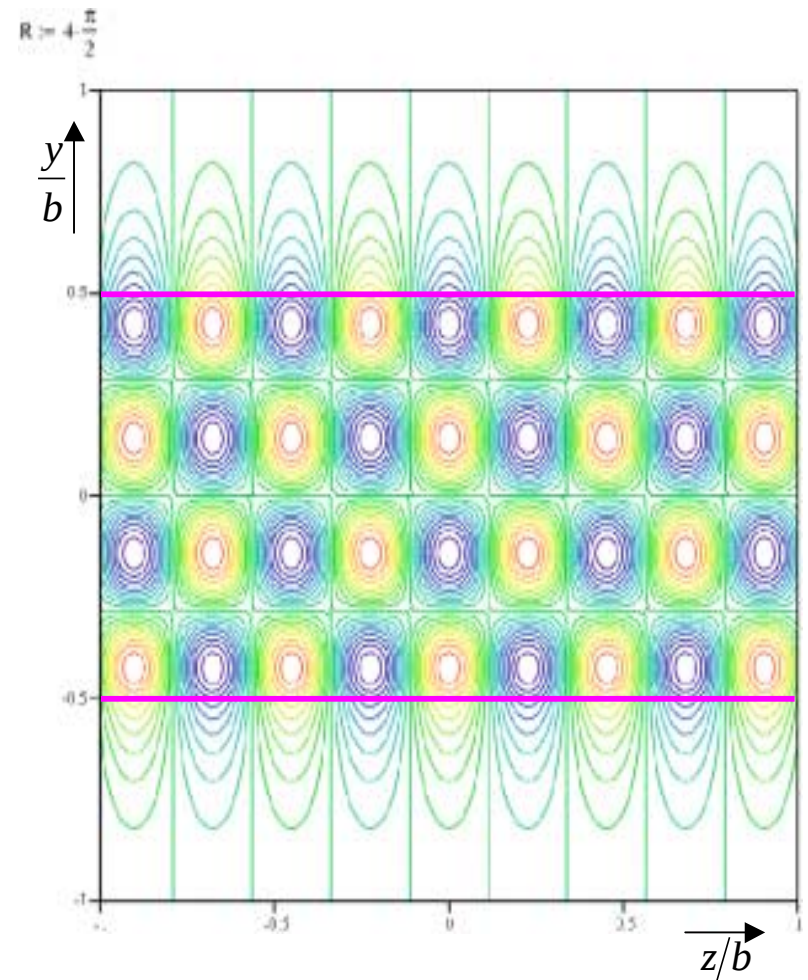
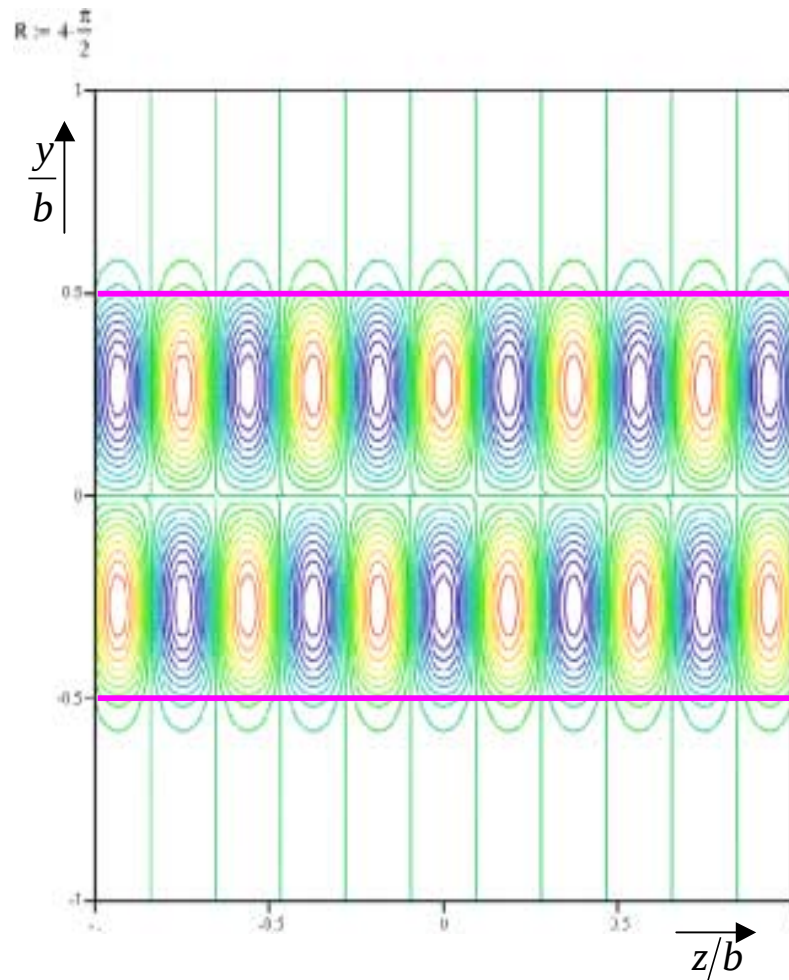
Ez-Feldtyp II



Ez-Feldtyp II



Ez-Feldtyp II



5 Komponenten Welle

$$H_x, H_y, E_x, E_y, E_z$$

