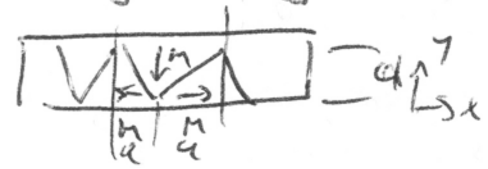
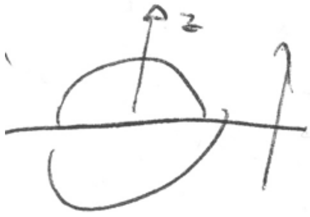
1) Richtungsableitung

2) 

GES. FKT FLÄCHENSTR.

3) $\varphi = -E_0 z \left[1 - \left(\frac{a}{r}\right)^3\right]$ $\quad \vec{E} = E_0 \vec{e}_z$



Ges RES. KRAFT

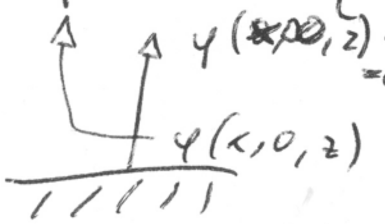
Spalt bei $z=0$

4) AUSG. VON DEM ELEKTR → POINTING INTEGRAL FORM
(vgl. 4.2.2.)

5) $\underset{\sim}{\varepsilon} = \varepsilon_{xx}\, \vec{e}_x \otimes \vec{e}_x + \varepsilon_{yy}\, \vec{e}_y \otimes \vec{e}_y + \varepsilon_{zz}\, \vec{e}_z \otimes \vec{e}_z$

GES: POISONÄHNL. DG. MIT $\rho \neq 0$
+ KOORD TRANSF UM AUF POISON ZU KO

6) $\varphi = U \,\mathrm{Re}\left\{ \sum_{n=1}^{\infty} 2 c_n e^{j k_n x} \right\}$ $\quad k_n = n \frac{2\pi}{a}$



GES $E(x, 0+, z)$

ähnl. 3.2.1

7) $B = B_0 \left(\cos(kz)\, \vec{e}_x + \sin(kz)\, \vec{e}_y \right)$ GES A

NUR MIT $\boxed{\text{Z-KO}}$

& MÖGL. MAG. ~~S~~KALARPOT?

8) $\left(\nabla^2 - \frac{1}{c^2} \partial_t^2 \right) w(\vec{r}, t) = - f(\vec{r}, t)$

$X(\vec{r}, j\omega) = \int_{-\infty}^{\infty} x(\vec{r}, t)\, e^{-j\omega t}\, dt \qquad x(\vec{r}, t) = \frac{1}{2\pi} \int_{-\pi}^{\pi} X(\vec{r}, j\omega)$

Ges FOURIER & BEDINGUNG
von w & f (WELCHEN GL. GENÜGEN)

$$E(z,t) = Re\{\underline{\mathcal{E}}\, e^{j(\omega t - kz)}\} \qquad \underline{\mathcal{E}} = \hat{E}_1 \vec{e}_x + j\hat{E}_2 \vec{e}_y$$

$$B(z,t) = \frac{1}{c}\left(\vec{e}_z \times E(z,t)\right)$$

ées MITTL. POINTING.

)

$$\gamma = \sqrt{(G'+j\omega C')(R'+j\omega L')}$$

ées α, β

$$\frac{\omega C'}{G'} >> 1 \qquad \frac{\omega L'}{R'} >> 1$$

$$(1+x)^a = 1 + ax \qquad |x| << 1$$