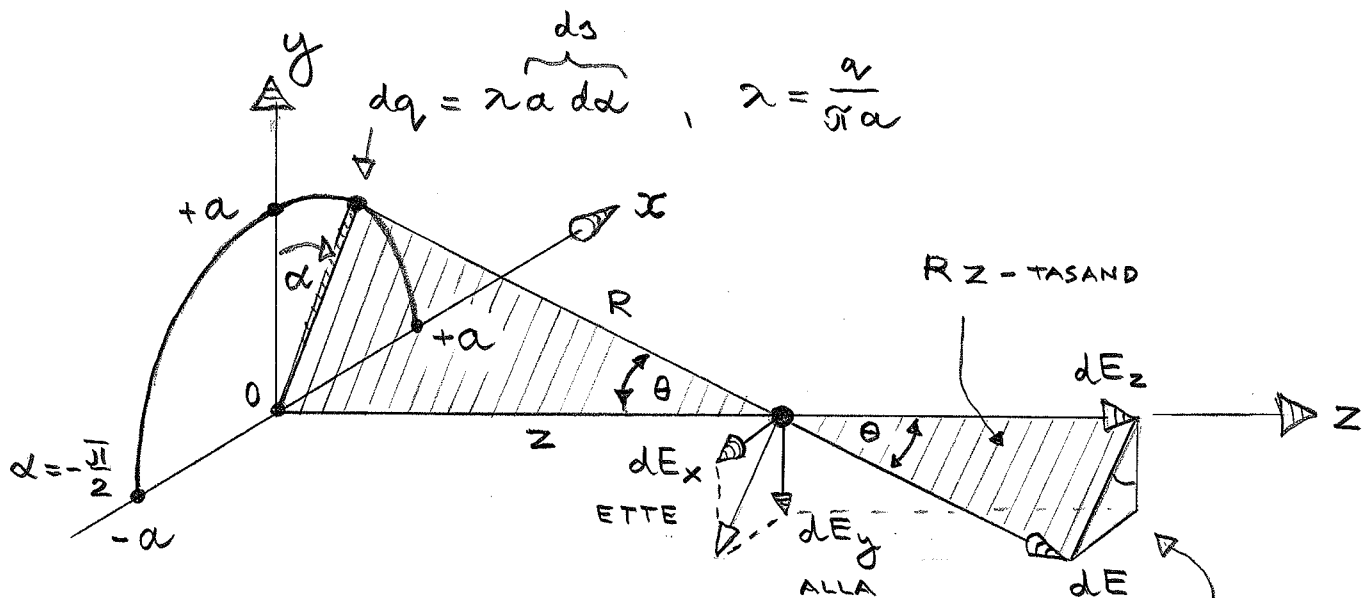


POOLRÖNGÄS:



$$dE_z = dE \cos \theta$$

$$dE_x = dE \sin \theta \sin \alpha$$

$$dE_y = dE \sin \theta \cos \alpha$$

$$E_z = \int dE_z = k \frac{q}{\pi a} \frac{a}{R^2} \frac{z}{R} \int_{-\pi/2}^{+\pi/2} d\alpha = \frac{kqz}{R^3}$$

$$E_x = \int dE_x = 0$$

$$E_y = \frac{k \lambda a d\alpha}{R^2} \cdot \frac{a}{R} \int_{-\pi/2}^{+\pi/2} \cos \alpha d\alpha = k \frac{q}{\pi a} \frac{a^2}{R^3} \cdot 2 = \frac{2}{\pi} \frac{kq a}{R^3}$$

