$$S\delta(z)\int_{-a/2}^{a/2}\cos\left(\frac{m\pi}{a}x\right)dx\,\delta(x)\int_{-b/2}^{b/2}\cos\left(\frac{n\pi}{b}y\right)\delta(y)\,dy$$ m e n dispari

$$= S_{mn}\frac{1}{2}\left\{\left[\frac{a}{2}-\left(-\frac{a}{2}\right)\right]+\left(\frac{a}{2m\pi}\right)\left[\sin\left(2\frac{m\pi}{a}\frac{a}{2}\right)-\sin\left(-\frac{2m\pi}{a}\frac{a}{2}\right)\right]\right.$$

$$\left.\frac{1}{2}\left\{\left[\frac{b}{2}-\left(-\frac{b}{2}\right)\right]+\left(\frac{b}{2n\pi}\right)\left[\sin\left(\frac{2n\pi}{b}\frac{b}{2}\right)-\sin\left(-\frac{2n\pi}{b}\frac{b}{2}\right)\right]\right\}\right\}$$

$$S\cdot 1\cdot 1 = S_{mn}\,ab\,\frac{1}{4} \qquad S_{mn}=\frac{4S}{ab}$$

La corrente in $z=0$ per la direzione $z>0$ è $\frac{1}{2}S_{mn}$

$$\vec{J}(x,y,z) = -D\vec{\nabla}\cdot\phi(x,y,z)$$

$$\vec{J}_{mn}(0,0,0) = -D\frac{\partial}{\partial z}\left[\mathcal{A}_{mn}\,e^{-\gamma_{mn}z}\right]_{z=0} = D\gamma_{mn}\mathcal{A}_{mn} = \frac{1}{2}S$$

Quindi $\mathcal{A}_{m,n} = \frac{2S}{ab}\frac{1}{D\gamma_{mn}}$

Da cui

$$\phi(x,y,z) = \frac{2S}{abD}\sum_{mn\ \text{dispari}}\frac{1}{\gamma_{mn}}\cos\left(\frac{m\pi}{a}x\right)\cos\left(\frac{n\pi}{b}y\right)e^{-\gamma_{mn}z}$$ RN16

Dato che per (RN15) $\gamma_{11}<\gamma_{12}<\gamma_{21}$ ecc. per $z \gg \gamma_{mn}$

$$\phi(0,0,z) \simeq A\,e^{-\gamma_{11}z} \qquad \ln(\phi) = \text{cost} - \gamma_{11}z$$

$$\frac{d\ln(\phi)}{dz} = -\gamma_{11}$$ Misurando il flusso in z si misura γ_{11} e quindi k^2

Fig. 7.2 ; Tab. 7.1