Скин-эффект

$$j(r,t) = j(r)\exp(-i\omega t),$$

$$\int_0^R dr\, 2\pi r j(r) = I,$$

$$H_\varphi(r,t) = H(r)\exp(-i\omega t),$$

$$H^{(e)}(r) = \frac{2I}{cr},$$

$$H^{(i)}(r) = \frac{2I}{cRJ_1(kR)}J_1(kr),$$

$$k = (1+i)/l,$$

$$l = c/\sqrt{2\pi\sigma\omega}$$