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解

$$S = \frac{1}{2} E_0 H_0$$

可知  $E_0 = \sqrt{2S \sqrt{\frac{\mu\mu_0}{\varepsilon\varepsilon_0}}} = 1.01 \times 10^3 \text{V/m}$

故

$$\sqrt{E^2} = \frac{\sqrt{2}}{2} E_0 = 7.3 \times 10^2 \text{V/m}$$

同理

$$\sqrt{H^2} = \frac{\sqrt{2}}{2} \sqrt{\frac{\varepsilon_0}{\mu_0}} E_0 = 1.9 \text{A/m}$$

6-9

解 (1)  $\vec{E}$  竖直向下,  $\vec{H}$  与侧面相切, 故  $\vec{S}$  垂直于侧面

(2)

$$\begin{aligned} P &= S \cdot 2\pi Rl \\ &= EH \cdot 2\pi Rl \\ &= \frac{q}{\varepsilon_0 A} \frac{I}{2\pi R} \cdot 2\pi Rl \\ &= \frac{q}{C} \frac{dq}{dt} \\ &= \frac{d}{dt} \left( \frac{q^2}{2C} \right) \end{aligned}$$