



$$\bar{j} = [\bar{j}_\perp, \bar{j}_\parallel] = j [\sin \alpha, \cos \alpha]$$

$$E_\perp = P_\perp \bar{j}_\perp \quad E_\parallel = P_\parallel \bar{j}_\parallel \quad \bar{E} = j [P_\perp \sin \alpha, P_\parallel \cos \alpha]$$

$$P = \bar{F} \cdot \bar{v} = \bar{E} q \cdot \bar{v} = \bar{E} j V \cdot \bar{v} = \bar{E} \cdot \bar{j} \Delta V$$

$$\begin{aligned} \frac{P}{\Delta V} &= \bar{E} \cdot \bar{j} = j [P_\perp \sin \alpha, P_\parallel \cos \alpha] \cdot j [\sin \alpha, \cos \alpha] = j^2 (P_\perp \sin^2 \alpha + P_\parallel \cos^2 \alpha) = \\ &= j^2 \left( \frac{1}{4} P_\perp + \frac{3}{4} P_\parallel \right) \end{aligned}$$