

$$\begin{aligned} I &= \frac{V}{R} \Rightarrow \\ \frac{dI}{dt} &= \frac{\partial I}{\partial V} \frac{dV}{dt} + \frac{\partial I}{\partial R} \frac{dR}{dt} = \frac{1}{R} \frac{dV}{dt} - \frac{V}{R^2} \frac{dR}{dt} = \frac{1}{R} \frac{dV}{dt} - \frac{I}{R} \frac{dR}{dt} \\ &= \frac{1}{379}(-0.03) - \frac{0.05}{379}(0.01) \approx -0.000080 \text{ A/s} \end{aligned}$$