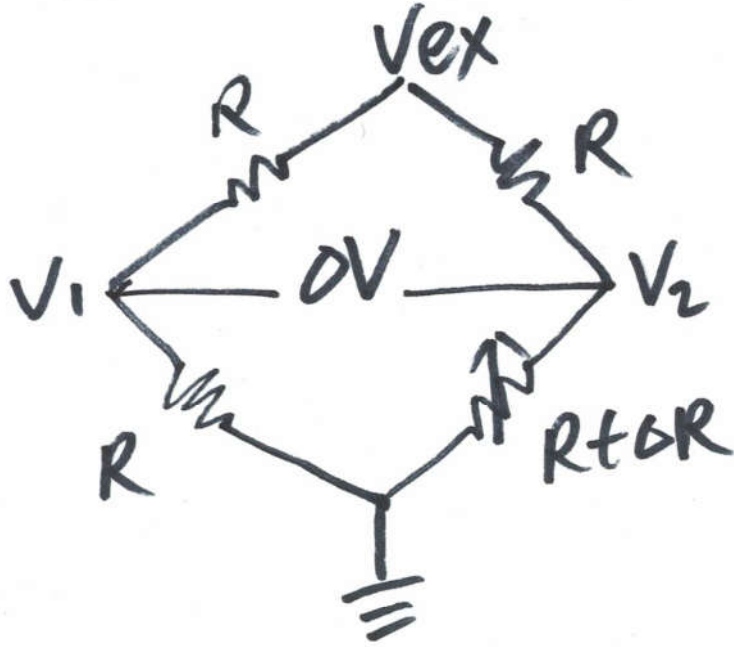


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① Quarter Bridge

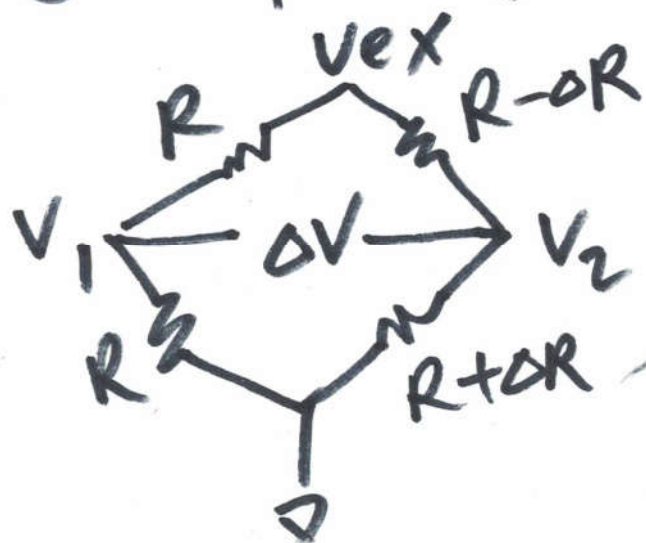
~~R~~
2R



$$\begin{aligned}\Delta V &= V_2 - V_1 = V_{ex} \left(\frac{R + \Delta R}{2R + \Delta R} - \frac{1}{2} \right) \\ &= V_{ex} \left(\frac{2(R + \Delta R) - (2R + \Delta R)}{2(2R + \Delta R)} \right) \\ &= V_{ex} \left(\frac{2R + 2\Delta R - 2R - \Delta R}{2(2R + \Delta R)} \right) \\ &= V_{ex} \frac{\Delta R}{2(2R + \Delta R)} \\ &= V_{ex} \cdot \frac{\Delta R}{4R}\end{aligned}$$

①

② Half Bridge

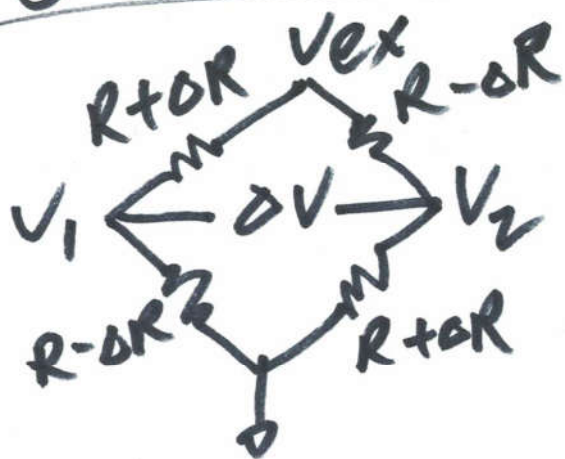


$$\Delta V = V_2 - V_1 = V_{ex} \left(\frac{R + \Delta R}{2R} - \frac{1}{2} \right)$$

$$= V_{ex} \cdot \left(\frac{R + \Delta R - R}{2R} \right)$$

$$= V_{ex} \frac{\Delta R}{2R}$$

③ Full Bridge



$$\Delta V = V_2 - V_1 = V_{ex} \left(\frac{R + \Delta R}{2R} - \frac{R - \Delta R}{2R} \right)$$

$$= V_{ex} \cdot \frac{2\Delta R}{2R} = V_{ex} \cdot \frac{\Delta R}{R}$$