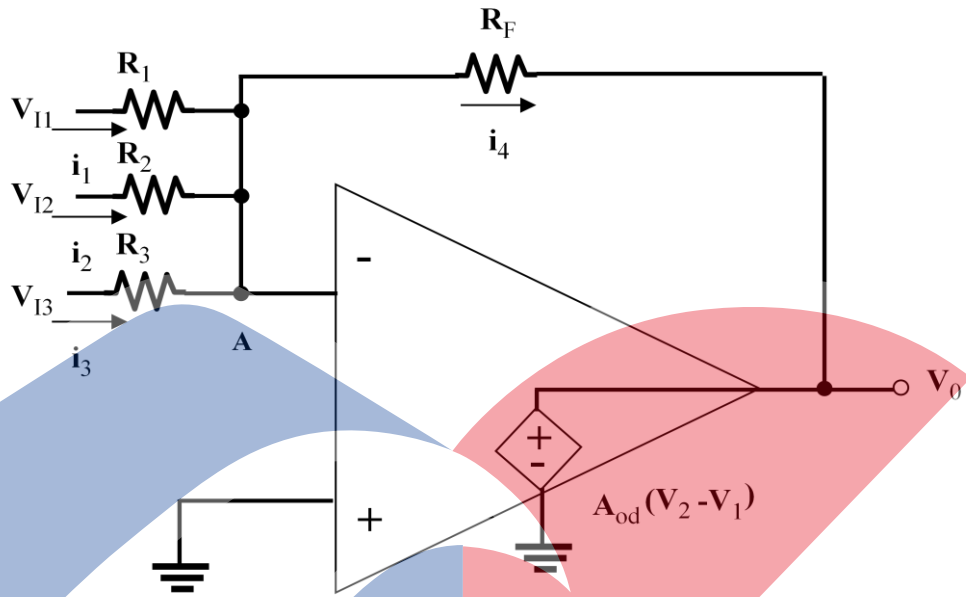


Chapter 9. 理想操作放大器及其電路

9.3 加法放大器

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9.3 加法放大器



\therefore Virtual ground $\rightarrow v_{(+)} = v_{(-)} = 0$

$$Z_{in} = \infty$$

$$i_1 = \frac{v_{I1} - 0}{R_1}$$

$$i_2 = \frac{v_{I2} - 0}{R_2}$$

$$i_3 = \frac{v_{I3} - 0}{R_3}$$

對 A 點使用 KCL

$$i_4 = i_1 + i_2 + i_3 = \frac{v_{I1}}{R_1} + \frac{v_{I2}}{R_2} + \frac{v_{I3}}{R_3}$$

$$v_o = -i_4 R_F$$

$$= -\left[R_F \frac{v_{I1}}{R_1} + R_F \frac{v_{I2}}{R_2} + R_F \frac{v_{I3}}{R_3} \right]$$

當 $R_F = R_1 = R_2 = R_3$

$$A_V = -[v_{I1} + v_{I2} + v_{I3}]$$