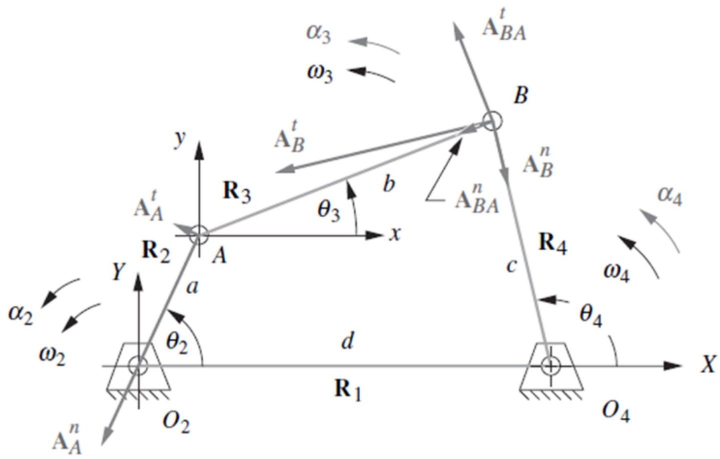
Análisis de aceleración



$$\vec{R}_2 + \vec{R}_3 - \vec{R}_4 - \vec{R}_1 = 0$$

$$\vec{V}_2 + \vec{V}_3 - \vec{V}_4 = 0$$

$$\vec{a}_2 + \vec{a}_3 - \vec{a}_4 = 0$$

$$\vec{V} = ir\omega e^{i\theta} \Rightarrow \frac{d\vec{V}}{dt} = \frac{d(ir\omega e^{i\theta})}{dt} = ir\frac{d(\omega e^{i\theta})}{dt} = ir(\alpha e^{i\theta} + (i\omega e^{i\theta}\omega))$$

$$\vec{a} = \underbrace{ir\alpha e^{i\theta}}_{a_T} - \underbrace{r\omega^2 e^{i\theta}}_{a_n}$$

$$\mathbf{A}_A + \mathbf{A}_{BA} - \mathbf{A}_B = 0$$

$$\mathbf{A}_A = \left(\mathbf{A}^t_A + \mathbf{A}^n_A\right) = \left(a\alpha_2\, je^{j\theta_2} - a\omega_2^2\, e^{j\theta_2}\right)$$

$$\mathbf{A}_{BA} = \left(\mathbf{A}^t_{BA} + \mathbf{A}^n_{BA}\right) = \left(b\alpha_3\, je^{j\theta_3} - b\omega_3^2\, e^{j\theta_3}\right)$$

$$\mathbf{A}_B = \left(\mathbf{A}^t_B + \mathbf{A}^n_B\right) = \left(c\alpha_4\, je^{j\theta_4} - c\omega_4^2\, e^{j\theta_4}\right)$$

$$\left[a\alpha_2\left(-\operatorname{sen}\theta_2 + j\cos\theta_2\right) - a\omega_2^2\left(\cos\theta_2 + j\operatorname{sen}\theta_2\right)\right]$$
$$+\left[b\alpha_3\left(-\operatorname{sen}\theta_3 + j\cos\theta_3\right) - b\omega_3^2\left(\cos\theta_3 + j\operatorname{sen}\theta_3\right)\right]$$
$$-\left[c\alpha_4\left(-\operatorname{sen}\theta_4 + j\cos\theta_4\right) - c\omega_4^2\left(\cos\theta_4 + j\operatorname{sen}\theta_4\right)\right] = 0$$

Real

$$-a\alpha_2 \operatorname{sen}\theta_2 - a\omega_2^2\cos\theta_2 - b\alpha_3\operatorname{sen}\theta_3 - b\omega_3^2\cos\theta_3 + c\alpha_4\operatorname{sen}\theta_4 + c\omega_4^2\cos\theta_4 = 0$$

Imaginaria

$$a\alpha_2\cos\theta_2 - a\omega_2^2\operatorname{sen}\theta_2 + b\alpha_3\cos\theta_3 - b\omega_3^2\operatorname{sen}\theta_3 - c\alpha_4\cos\theta_4 + c\omega_4^2\operatorname{sen}\theta_4 = 0$$