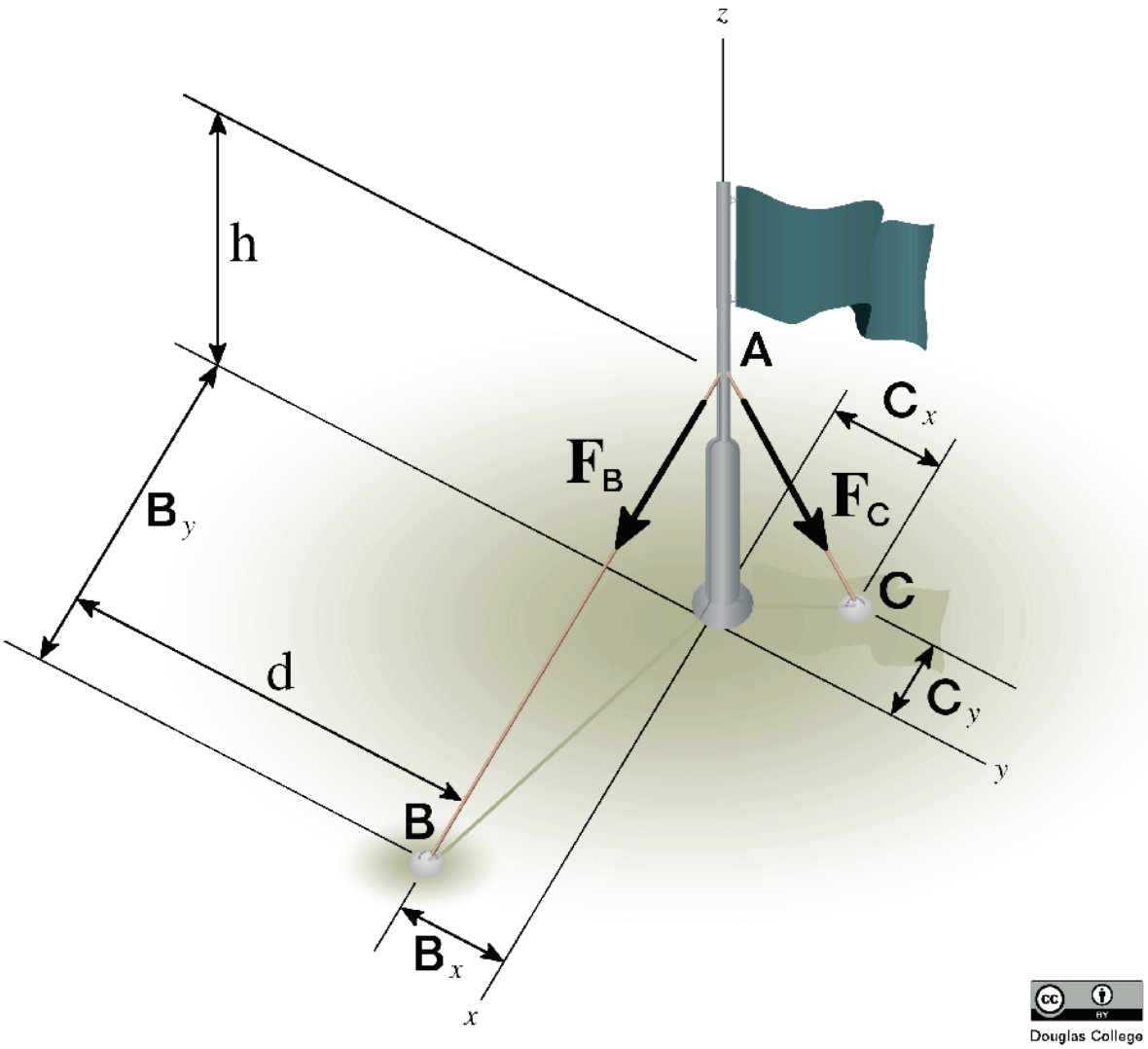

Find the magnitude and coordinate direction angles of the resultant force acting on the flag pole if F_B and F_C are given.

Express both forces as cartesian vectors.

$$\overrightarrow{F_B} = \frac{F_B}{\sqrt{B_x^2 + B_y^2 + h^2}}(B_y\hat{i} - B_x\hat{j} - h\hat{k})$$

$$\overrightarrow{F_C} = \frac{F_C}{\sqrt{C_x^2 + C_y^2 + h^2}}(-C_y\hat{i} + C_x\hat{j} - h\hat{k})$$

Find the magnitude of the resultant force and its coordinate direction angles.

$$\overrightarrow{F_R} = \overrightarrow{F_B} + \overrightarrow{F_C}$$

$$F_{Rx} = F_{Bx} + F_{Cx}$$

$$F_{Ry} = F_{By} + F_{Cy}$$

$$F_{Rz} = F_{Bz} + F_{Cz}$$

$$||\overrightarrow{F_R}|| = \sqrt{{F_{Rx}}^2 + {F_{Ry}}^2 + {F_{Rz}}^2}$$

$$\alpha = \cos^{-1}\left(\frac{F_{Rx}}{||\overrightarrow{F_R}||}\right)$$

$$\beta = \cos^{-1}\left(\frac{F_{Ry}}{||\overrightarrow{F_R}||}\right)$$

$$\gamma = \cos^{-1}\left(\frac{F_{Rz}}{||\overrightarrow{F_R}||}\right)$$