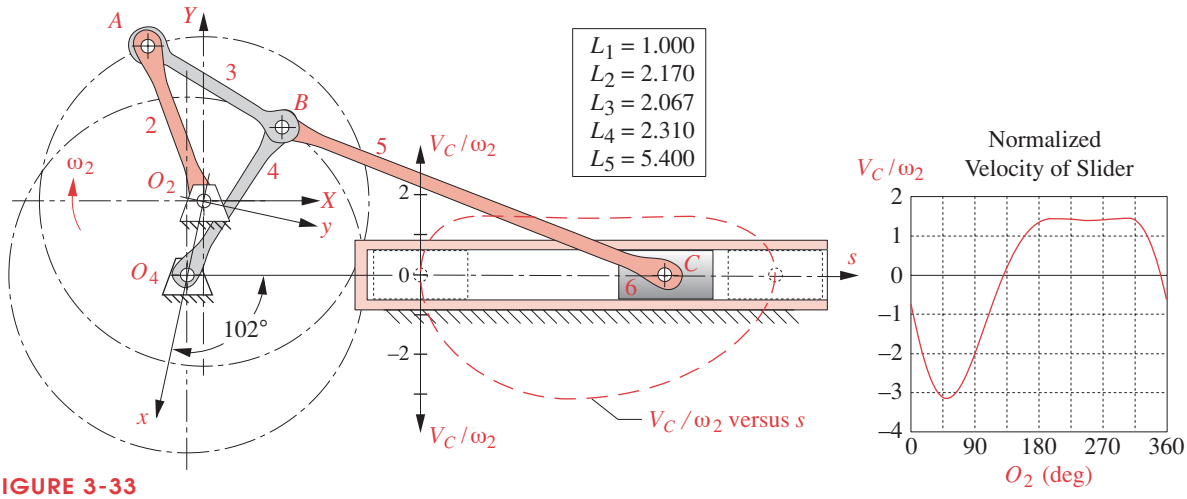

FIGURE 3-33

Approximate constant velocity, draglink driven slider-crank sixbar mechanism[22]

6-68 Figure 3-33 (p. 142) shows a sixbar slider crank linkage. Find all its instant centers in the position shown.

†6-69 Calculate and plot the centrodes of instant center I_{24} of the linkage in Figure 3-33 (p. 142) so that a pair of noncircular gears can be made to replace the driver dyad 23.

6-70 Find the velocity of the slider in Figure 3-33 (p. 142) for the position shown if $\theta_2 = 110°$ with respect to the global *X*-axis assuming $\omega_2 = 1$ rad/sec CW.

a. Using a graphical method.
b. Using the method of instant centers.
†c. Using an analytical method.

†6-71 Write a computer program or use an equation solver such as *Mathcad*, *Matlab*, or *TKSolver* to calculate and plot the angular velocity of link 4 and the linear velocity of slider 6 in the sixbar slider crank linkage of Figure 3-33 (p. 142) as a function of the angle of input link 2 for a constant $\omega_2 = 1$ rad/sec CW. Plot V_c both as a function of θ_2 and separately as a function of slider position as shown in the figure. What is the percent deviation from constant velocity over $240° < \theta_2 < 270°$ and over $190° < \theta_2 < 315°$.

† These problems are suited to solution using *Mathcad*, *Matlab*, or *TKSolver* equation solver programs.