

Analysis Of Four Bar Mechanism Using Vector Analysis

Problem Statement

Find the Output torque of the four bar mechanism for one full cycle of motion .
Given Data

Length Of each Link in meters.

Mass of each link in Kg.

Angular velocity of the driver link.

Control Buttons

"RUN" button starts the animation.

"STOP" button stops the animation.

"RESET" button resets the animation.

Procedure

Set all the input parameters using sliders. Press reset button and then start button to start the animation.

Concepts used

Displacement, velocity, and acceleration analysis using complex number method.

Total acceleration at any point on the link.

Acceleration difference.

Inertia forces due to acceleration of each link.

Free body Diagram.

What to see

Various graphs are plotted.

Graph of the angle of coupler link vs. angle of the driver link

Graph of the angle of follower link vs. angle of the driver link

Graph of the output torque vs. angle of the driver link

Free body diagrams for each link is plotted.