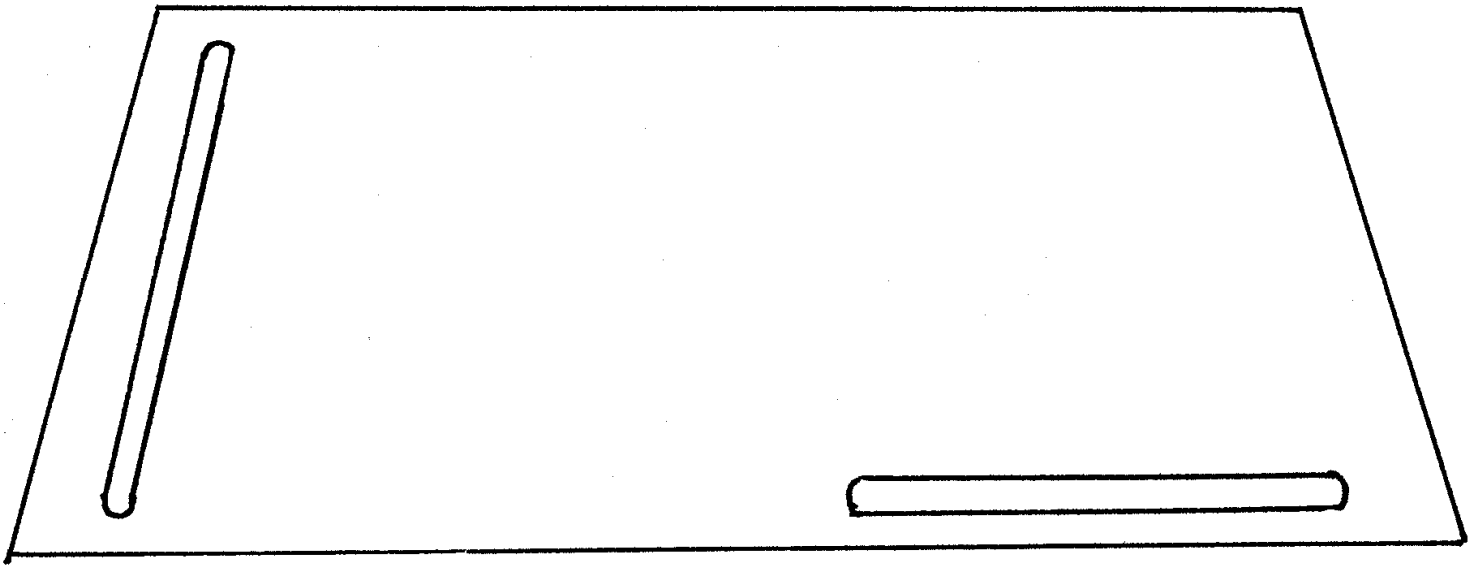
ME5243: Advanced Mechanism Design

2PP Graphical Motion Synthesis Example

FJ Cruiser Windshield Wiper Redesign

An FJ Cruiser has three windshield wipers. Let's explore an alternative with a single wiper. In the figure below, select moving pivots near the ends of the wiper blade and synthesize a four bar mechanism to guide the wiper between the two precision positions.



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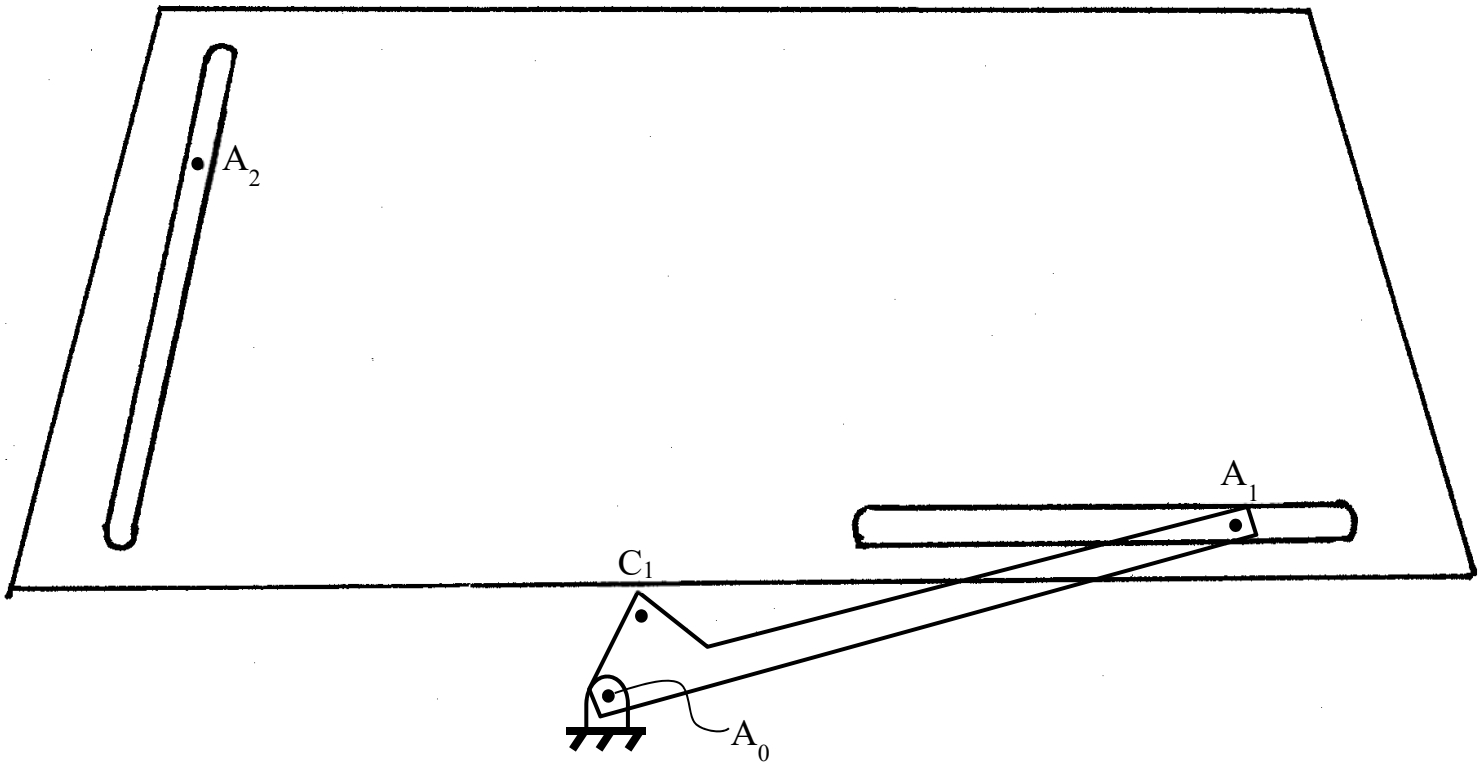
Driving Dyad Synthesis Example

Below is a solution for an input link of the four-bar mechanism you just synthesized. To drive this with a continuous rotation motor, a driving dyad is needed. To rapidly clear the windshield on the return stroke, a timing ratio of 1.15 to 1.2 is desired. Synthesize the driving dyad using the moving pivot C_1 as your connection to the input link.



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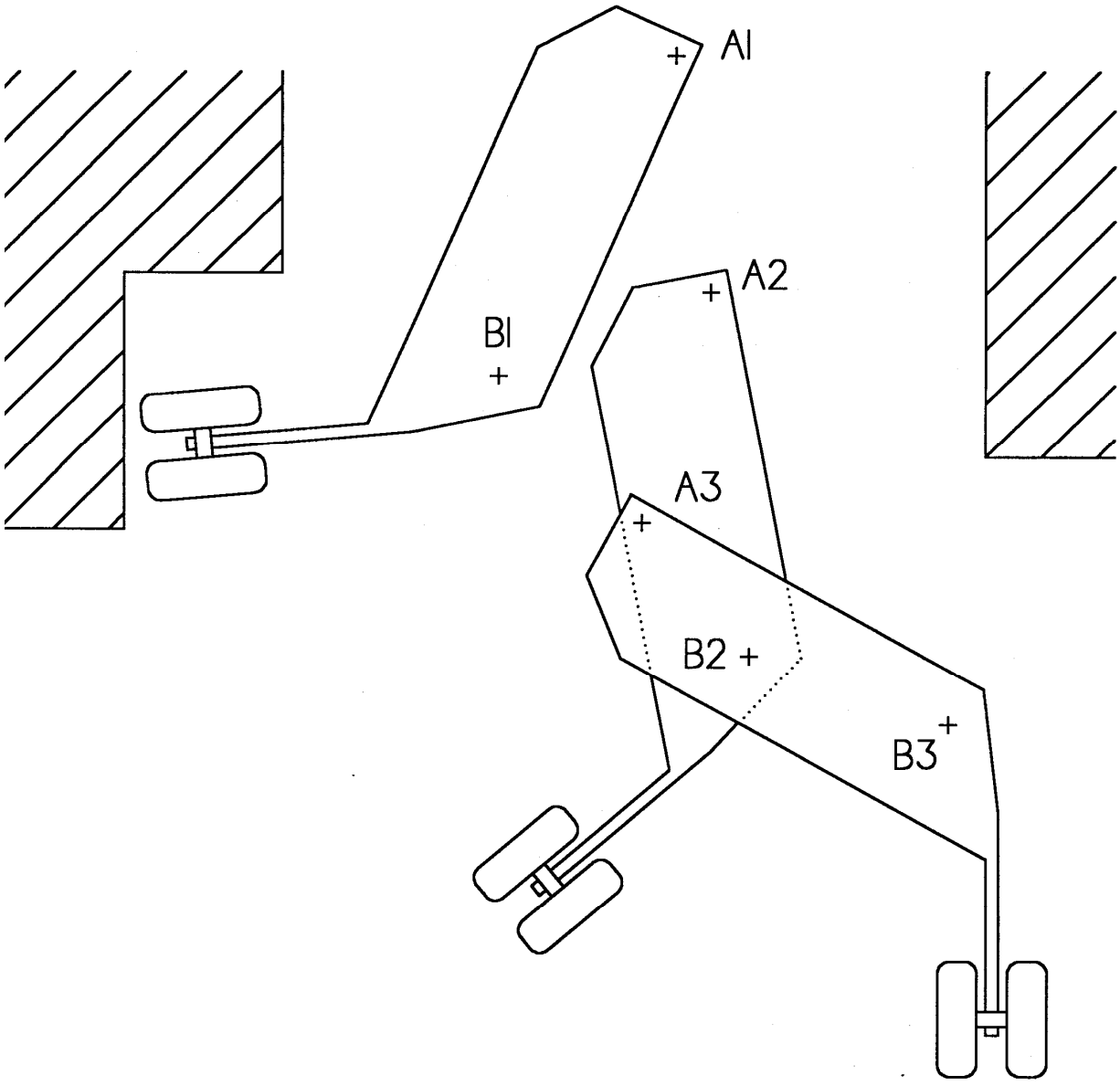
3PP Graphical Motion Generation Synthesis

Aircraft Landing Gear

Synthesize a four bar mechanism to guide the aircraft land gear through the 3PP shown below using the selected moving pivots.



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3PP Graphical Motion – Alternative Solutions

Aircraft Landing Gear

The aircraft structure requires that the ground pivots be located on the right side of the landing gear stowage compartment. Through adjusting the location of the intermediate position or adjusting the moving pivot free choice, develop a solution with both ground pivots on the right side.