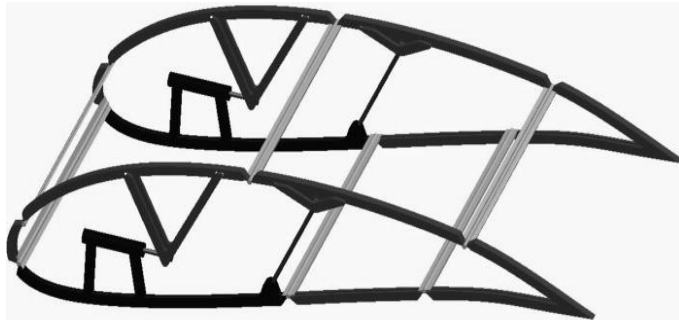
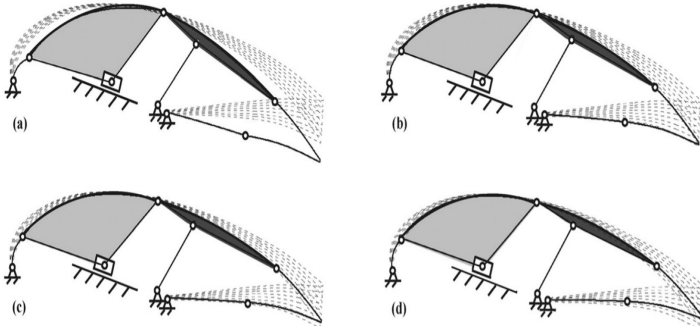


Research objectives: The goal is to find a single set of spatial bodies to approximate any given set of spatial curves. The advantage of this method is its capacity to describe the difference in space curves with a limited number of parameters.

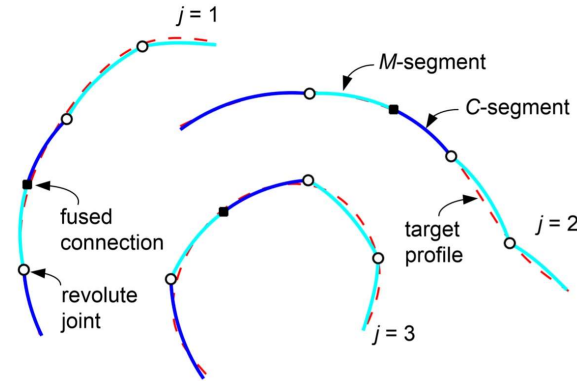
Morphometric Analysis

Morphometrics is the quantitative comparison of shapes, primarily curves. This work investigates a kinematic synthesis methodology for designing a spatial chain of rigid-bodies to match arbitrary spatial curves.

Motivations

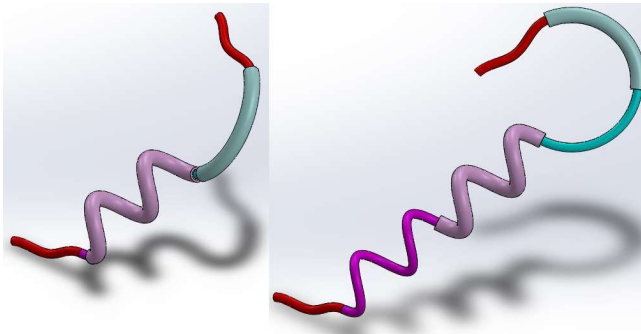


Shape-Changing Aircraft Wings



A rigid-Body Chain Approximates The Shape of Three Target Profiles

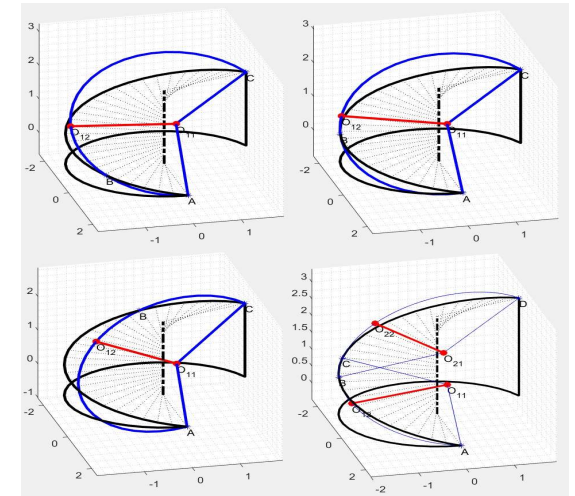
Sample Curves



M-Segments

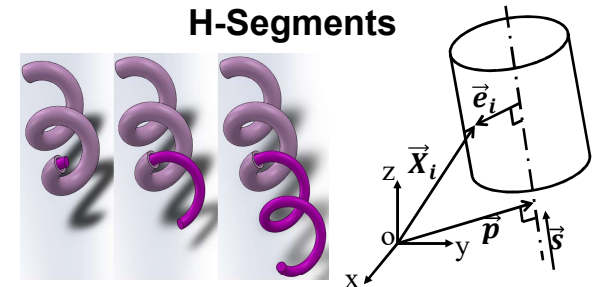


A sample segment from each of 3 target profile to be represented by one mean segment.



3 arbitrary points on the helix determine a line perpendicular to the axis.

H-Segments



C-Segments

