Spatial Chains for Matching 3-Dimensional Curves

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**Research objectives:** This work introduces a synthesizing methodology for designing a chain of 3D bodies to match a set of arbitrary spatial curves. The methodology is developed as the extensional part of the planar shape-changing mechanism.

**Segmentations**
Three types of spatial segments are created to make the match results approach to actual applications: a rigid segment, a helical segment with constant curvature and torsion but varying length, and a growth segment that maintains its shape but may be scaled to become larger or smaller.

**Morphometric Analysis**
Morphometry is the quantitative comparison of shapes.

**A rigid-body chain approximates the shape of 3 target profiles**