Introduction
The goal of this work is to formulate spatial mechanism analysis and design problems via a method suited to employ the tools of numerical algebraic geometry. This work illustrates their use by analyzing the spatial RCCC and RRRCC linkages. The specialization to pure rotations using special unitary matrices is also presented and used in the analysis of the spherical four-bar and Watt I linkages. The motion curves generated in this work are validated by comparison to other published work.

RCCC Linkage

RRRCC Linkage

Spherical Watt I Linkage

Spherical Four-Bar Linkage