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Measuring the closeness to singularities of a planar parallel manipulator using geometric algebra

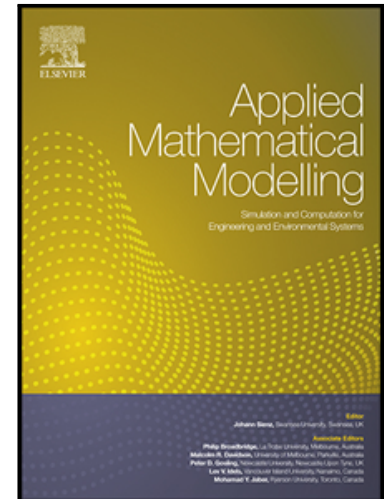
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Highlights

- A new index for measuring the closeness to the singularities of parallel manipulators is proposed.
- The index is defined as the ratio of non-singularity volume to workspace volume.
- The singularity volume is calculated as the space between singularity and approximate singularity surfaces.
- An approximate singularity polynomial is derived to define the approximate singularity surface.

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