Research Papers

Design of an Active Ankle-Foot Prosthesis Utilizing a Four-Bar Mechanism

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Abstract

This article discusses the design and testing of a powered ankle prosthesis. This new prosthesis mimics nonamputee (normal) ankle moments during the stance phase of gait through the use of an optimized spring loaded four-bar mechanism. A prototype prosthesis based on the optimization was designed, fabricated, and tested. The experimental results achieved 93.3% of the simulated theoretical ankle moment giving substantial evidence that this approach is a viable in designing powered ankle prostheses.

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