

Abstract Submitted
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Nonlinear normal modes of the double and triple planar pendulum ALEX JURGENS, CAVENDISH MCKAY, Marietta College — Nonlinear normal modes (NNMs) are a nonlinear extension of the classical normal modes of linear vibration theory, capable of demonstrating nonlinear behaviors including bifurcations, internal resonance, and modal interactions. However, use of NNMs in structural dynamics remains limited due to difficulties in computation. Previous research has shown successful computation of NNMs using a numerical algorithm combining a shooting method with a continuation technique. We apply this algorithm to the double and triple planar pendulum, connecting a staple problem in nonlinear dynamics with a fresh analytical perspective.

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