

Abstract Submitted
for the OSS17 Meeting of
The American Physical Society

The Concept Of Metastability For One-Legged Standing ULRICH ZURCHER, NEAL CARR, LAUREN MOORE, Physics, Cleveland State University, PAUL SUNG, Physical Therapy, Eastern Michigan University — Standing on one foot has been characterized by a continuum between static equilibrium (standing) and dynamic equilibrium (walking). This suggests that sways of the body are important for a person to maintain the upright position and prevent a fall. We examine the center of pressure (COP) changes with and without visual input, and find that the character of the COP dynamics is different on different timescales; it is random (stochastic) on short timescales ($0 < t < 20$ ms), ballistic (deterministic) on intermediate timescales ($20 \text{ ms} < t < 200$ ms), and random on long timescales.

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Date submitted: 27 Mar 2017

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