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RESEARCH ABSTRACT FORM

TITLE: Passivity Based Control of a 3-D Bipedal Robot

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This work presents the use of passivity based control (PBC) to improve the walking stability of a 3-D bipedal robot ARMIE; a simulated model with 7 degrees of freedom. ARMIE consists of two rigid legs, curved feet, a hip, a torso, a prismatic joint, and a rotating flywheel used to simulate arms. Passivity based control is used in conjunction with ARMIE's existing feedback control techniques. Results of similar work are presented to show that PBC can increase the basin of attraction for limit cycles and better enable disturbance rejection.