Summary of
"Controlling the Walking Speed of Bipedal Robots by Adjusting Asymmetry"

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A measure of "asymmetry" based on angular momentum is defined. It is shown that if asymmetry is zero then the biped follows a periodic orbit. For planer bipeds based on asymmetry a criteria for stability is found. The measure of asymmetry consists of two components: the first component measures the average position of the center of mass with respect to the support point and the second components measures the angular momentum loss due to the impact.

Based on the definition of asymmetry, three methods for controlling the speed of bipedal robots are developed. Using these methods while respecting the stability, the biped is able to "change the gears" and speed up or down. Moreover, for each speed the best gait based on stability and energy efficiency is chosen.