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DYNAMIC WALKING 2018

ABSTRACT

Hi, my name is Fu, previously worked in Osaka University and recently move to Honda research institute Japan. I really grow up in this community and attend dynamic walking 2013 and 2016. This time I want to talk about limit cycle controller together with variable stiffness actuator.

After 2000, Limit cycle controller is becoming more important principle because it makes model walks more dynamical, more natural and energy-efficient. The trick of it usually constrains leg joint motion in order to reduce the system dimension, and focus on searching viable parameters for stabilizing trunk movement.

In fact, human walking interval data shows difference from stride to stride, if we pay more attention to the importance of joint constraint feedback gain, more dynamical walking may be explained. Variable stiffness will increase the system dimension, but it could also enrich system behavior, save energy, increase or decrease stability, trigger movement transition and enable motor learning.

So I think it is interesting to combine this two mechanisms together.