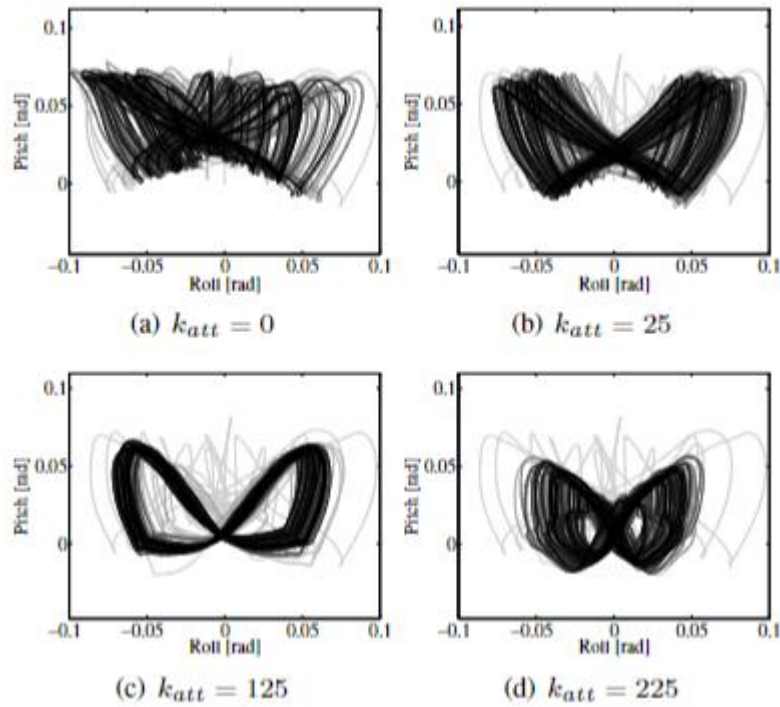


Limit Cycle Examples

1. Quadruped



Ajallooeian, M., Gay, S., Tuleu, A., Spröwitz, A. and Ijspeert, A.J., 2013, November. Modular control of limit cycle locomotion over unperceived rough terrain. In 2013 IEEE/RSJ International Conference on Intelligent Robots and Systems (pp. 3390-3397). Ieee.

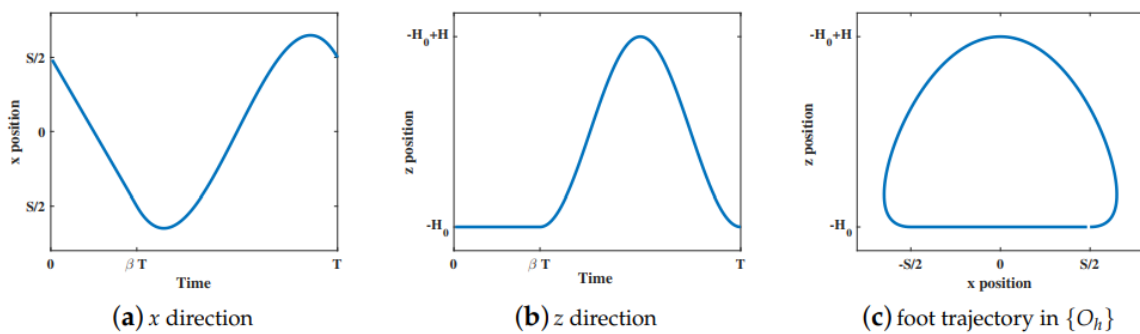
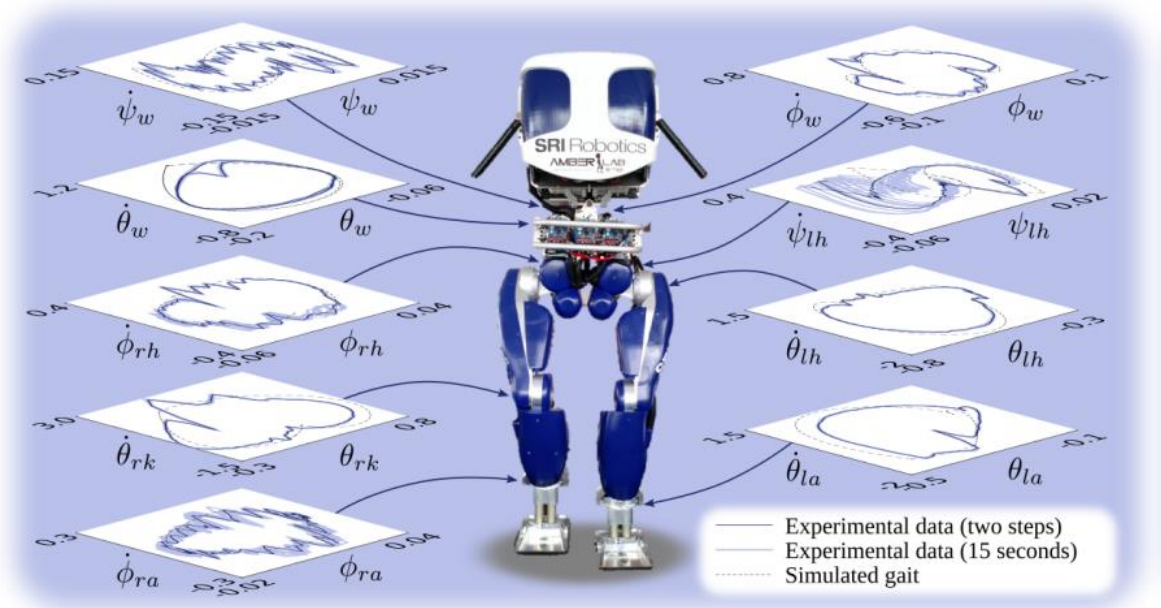


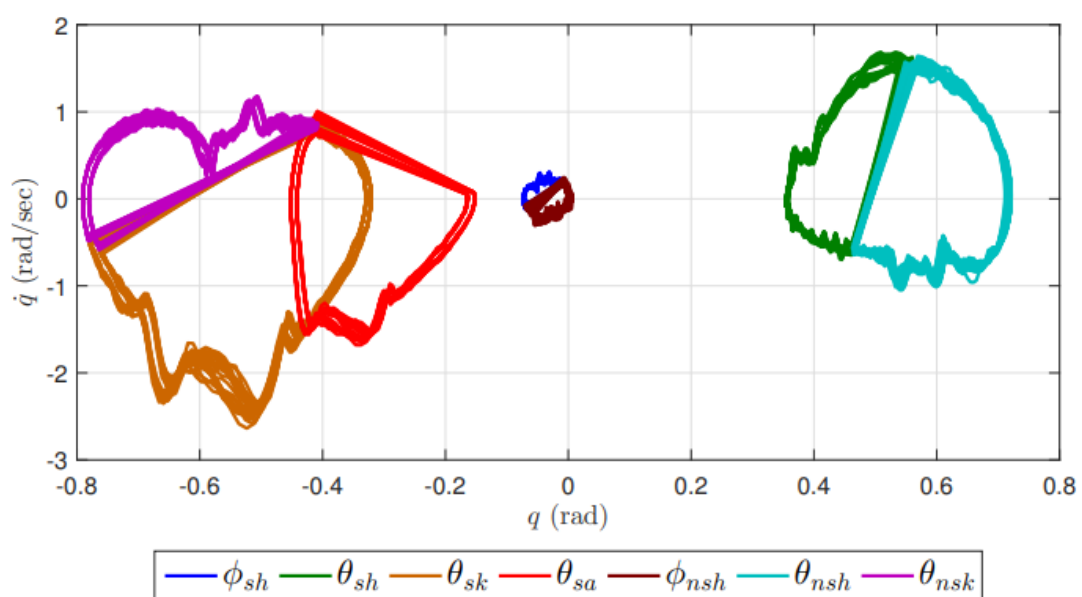
Figure 8. The foot trajectory curves.

Yang, K., Rong, X., Zhou, L. and Li, Y., 2019. Modeling and analysis on energy consumption of hydraulic quadruped robot for optimal trot motion control. Applied Sciences, 9(9), p.1771.

2. Biped

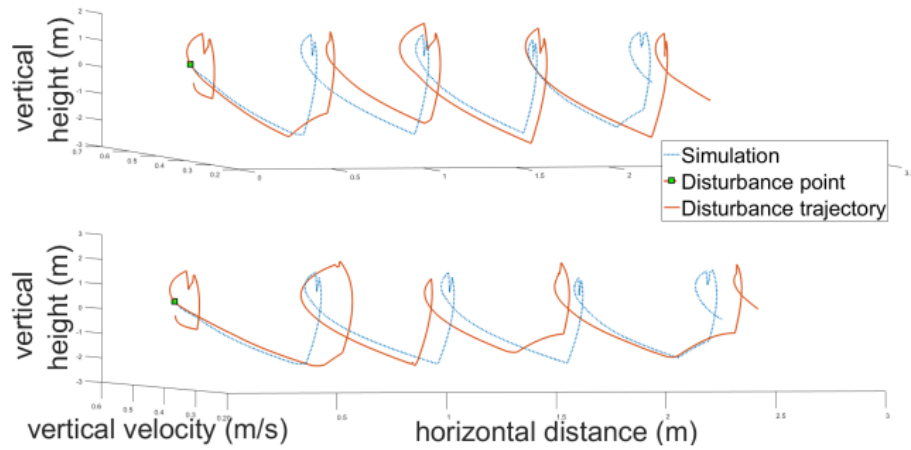


Hereid, A., Cousineau, E.A., Hubicki, C.M. and Ames, A.D., 2016, May. 3D dynamic walking with underactuated humanoid robots: A direct collocation framework for optimizing hybrid zero dynamics. In 2016 IEEE International Conference on Robotics and Automation (ICRA) (pp. 1447-1454). IEEE.

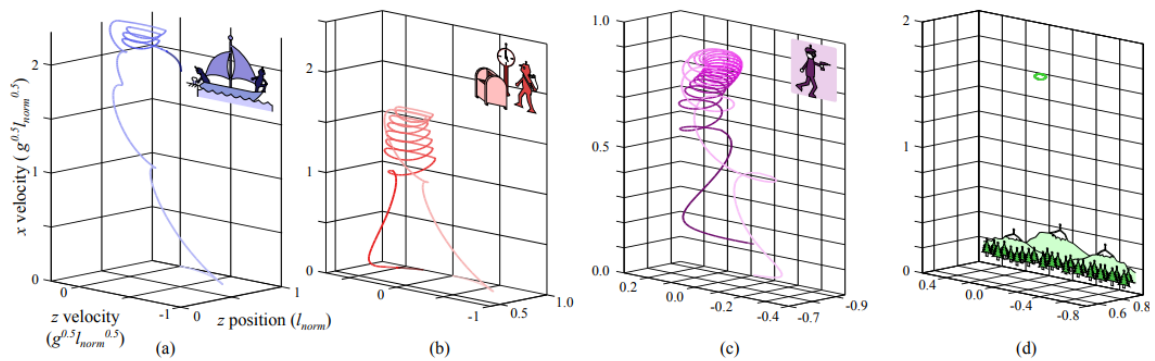


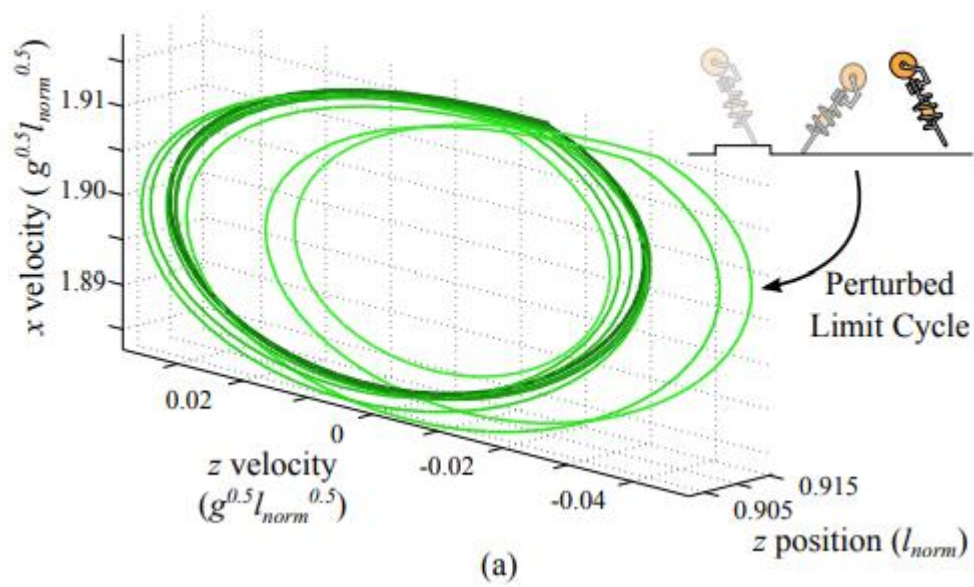
Reher, J., Cousineau, E.A., Hereid, A., Hubicki, C.M. and Ames, A.D., 2016, May. Realizing dynamic and efficient bipedal locomotion on the humanoid robot DURUS. In 2016 IEEE International Conference on Robotics and Automation (ICRA) (pp. 1794-1801). IEEE.

3. Monopod



Fisher, C., 2021. Trajectory optimisation inspired design for legged robotics.





Hubicki, C., Jones, M., Daley, M. and Hurst, J., 2015, May. Do limit cycles matter in the long run? stable orbits and sliding-mass dynamics emerge in task-optimal locomotion. In 2015 IEEE International Conference on Robotics and Automation (ICRA) (pp. 5113-5120). IEEE.