

Archit Rede, Noah Eckstein

ME 7385 Project Description

Nov. 12, 2021

3D Snowboarding Optimization

The movement task that we want to optimize is snowboarding. The system will be modeled as a multilinked pendulum on a roller skate with trucks, where the links rotate about axes parallel to the velocity of the skate, and the angle of the bottom link off from vertical will be linearly proportional to the transverse acceleration of the skate. We will seek periodic motions. Constraints will be placed on average downhill velocity, and the cost will be energetic.