A Biologically Inspired Approach to Bipedal Running

Bipedal locomotion is known to be complex due to numerous difficulties in construction of bipedal platforms as well as in their control. The most challenging problem is the synchronization of the multi-joint chains. The higher the number of actuators get, the more difficult it becomes to control the robot. The second essential of an efficient bipedal running is energy recycling. There are seldom known actuators capable of back conversion and recycling of the mechanical energy. Furthermore, a serious problem raises by combining compliance as a mean to elasticity with the precise synchronization of the joints, as there is a clear trade off between these two properties. In my presentation I will present a biologically inspired approach to address the mentioned problems.