

Dynamic Modelling and Simulation of Four Legged Jumping Robot with Complaint Legs

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Abstract

Legged locomotion is used by most of the animals and human beings on the earth. Legged locomotion is preferred over the wheeled locomotion as it can be used for both flat and rough terrains. In this paper, an attempt has been made for the dynamic modelling and simulation of four legged jumping robots with compliant legs. Sagittal plane and bounding gait has been used. For energy saving passive dynamics has been used with the help of compliant legs (linear spring). Different state variables have been obtained for analysis. Control strategies have been implemented on dynamic modelling for forward velocity control.

Keywords: passive dynamics, legged locomotion, sagittal plane, control.