

## The octopod robot and its dynamical model during walking on the flat and susceptible ground

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*Abstract:* The paper is devoted to the system controlling the movement of the octopod robot legs as well as simulation of the octopod dynamical model during walking on the flat and susceptible ground with damping. Numerous types of different multi-legged walking robots can be found in engineering applications, however, eight-legged robots (octopod robots) have become popular recently. The proposed dynamical model of the mentioned multi-legged robot allows to determine the reaction forces between the ground and the octopod's legs forming a support polygon, as well as balance of its body on the soft ground. In addition to the dynamic parameters of the considered robot, also displacement and velocity curves are determined. The walking process of the robot is visualised in Mathematica software. The obtained results indicate different ground reaction forces acting on the robot legs as well as fluctuation of the robot for different types of controls.

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