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BASIC INERTIAL CHARACTERISTICS OF HUMAN BODY BY WALKING

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Summary: Nowadays the interest to humanoid robots, exoskeletons, human – machine interface has been increasing. On the mechanical point of view Human body is composed of links connected by joints to form a kinematic chain. In machines and mechanisms joints are typically rotary (revolute) or linear (prismatic). However, in the human body hips are revolute joints and links are bones. The present research studies structure and kinematics of human body walking. More in particular mass-inertial properties of average Bulgarian male and females are insert to kinematic equations describing human motion. Moreover, geometrical model of human body walking is proposed. Simulations with 3D CAD software are done. The comparison performed between our model results and data reported in literature gives us confidence that this model is accurate. Finally, analogues between human body and mechanisms are discussed.