The 3D Musculoskeletal model of deltoid muscle with mechanochemical phenomena

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The poster presents an authorial 3D musculoskeletal model of deltoid muscle. The starting point was the innovative model of the virtual gastrocnemius muscle, which was also created by the author. It was the first 3D musculoskeletal model that used the Usik's set of equations as a part of the muscle's behavior to provide thermomechanical reactions. A B-spline solid was the basis for the graphic representation of this model. The proposed, virtual deltoid muscle model has been extended with a new issue concerning interactions between the three muscle zones. The validation method of the proposed model was to compare values of angles between the bones in the shoulder in each frame of the simulation in the virtual model to real values of the obtuseness in the joint.

Biography

Adrianna Bielak is a graduate in Computer Science at the Lodz University of Technology with the specialty of Games Technology and Interactive Systems. Currently she is a PhD student at the Institute of Information Technology at the same university, where she is specialized in creating virtual musculoskeletal models and motion capture systems. Adrianna is one of the coordinators of the Polish Women in Technology Association. She also graduated from the Academy of Music in Lodz in the field of choreography and dance techniques, which allows her to better understand the nature of her research.

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