**viscoelastic modeling of porcine ligaments**

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**Abstract.** Viscoelastic quasi-linear analytical models, as Fung, was implemented through the utilization of experimental results obtained from several porcine ligaments as: lateral collateral ligament (LCL), anterior cruciate ligament (ACL), posterior cruciate ligament (PCL) and medial collateral ligament (MCL). To implement quasi-linear viscoelastic models for soft tissues, as the Fung one, was necessary the utilization of a programming language, as C Sharp, and Object-oriented programming to deal with the model’s mathematical demands, as the convolution calculations. Moreover, those technologies allow to reduce the code execution time which was one of the main problems. Despite this benefit, was necessary to implement the numerical methods used in process. The models’ results show the stress evolution in relaxation tests. Although The preliminary results show a good correlation between experimental and analytical models, showing a noticeable change in ligaments stiffness after the experimental implementation of relaxation tests.

**Keywords:** knee ligaments, analytic model, viscoelasticity, Fung