27th IFIP TC7 Conference 2015 on System Modelling and Optimization

MS6: Modeling, Estimation, and Control Related Issues in Physical and Biological Applications

Sensitivity Analysis and Control in the Lamina Cribrosa

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Abstract: We discuss sensitivity analysis with respect to important biological parameters (Lame coefficients, intra-ocular pressure and retrolaminar tissue pressure) for a poroelastic model describing the lamina cribrosa in the eye. It is believed that the biomechanics of the lamina cribrosa plays an important role in the retinal ganglion cell loss in glaucoma. Our goal is to reveal which parameters are most influential and need to be controlled in order to prevent the development of glaucoma.