

## Optimal Control in Poroelasticity

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In this talk we address optimal control problems subject to fluid flows through deformable, porous media. In particular, we focus on quadratic poroelasticity control problems, with both distributed and boundary controls, and prove existence and uniqueness of optimal control. Furthermore, we derive the first order necessary optimality conditions. These problems have important biological and biomechanical applications. For example, optimizing the pressure of the flow and investigating the influence and control of pertinent biological parameters are relevant in ocular tissue perfusion and its relation to the development of ocular neurodegenerative diseases such as glaucoma.