

## Talk announcement

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## Isogeometric Analysis for non-linear elasticity problems

Based on a recent paper of Manon Blaise, Franz Chouly and Pierre-Yves Rohan we consider a non-linear elasticity model problem for a human artery. Instead of using a standard Finite Element approach we use Isogeometric Analysis (IgA). Starting from a potential energy function we derive a non-linear variational formulation which can be linearized in a first step and solved numerically in a second step by using a Newton-Raphson iteration. Thereupon we consider some two-dimensional experiments including the geometry locking effect and first results of simulating an annulus. Finally, we provide an outlook on ongoing research, regarding further experiments and numerical analysis.