

Title:

Concrete as non Newtonian fluid

People:

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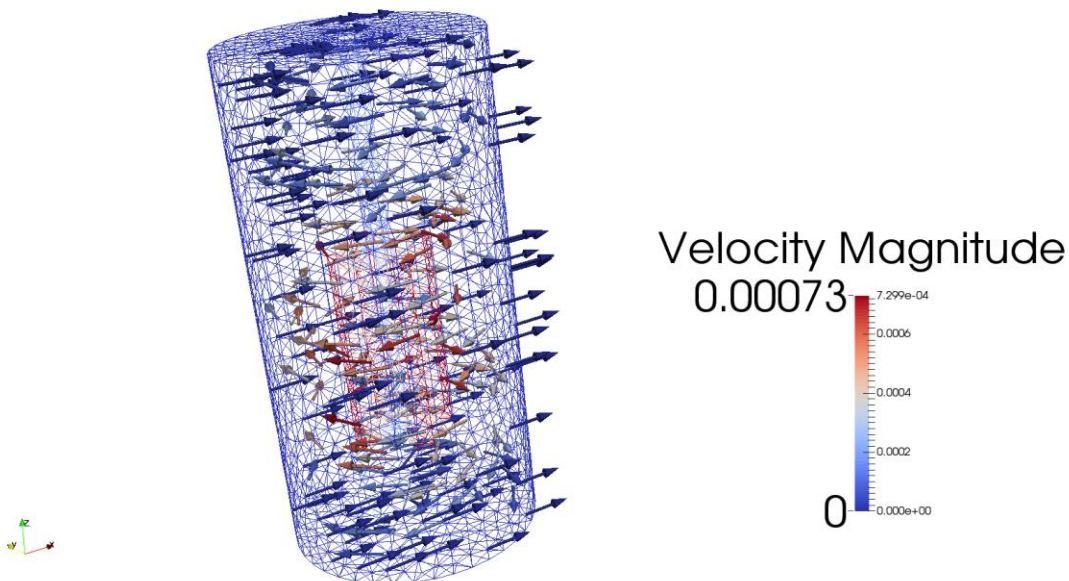
Dr. Charbel Habchi – Notre Dame University

Grant:

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Short Description:

Modeling the cement paste during the vane test has been the subject of extensive studies during the last decades. The accepted models seem to rely on the solid subjected to yielding models. However the cement paste is a fluid with suspension, which is universally modeled as a Non-Newtonian Power law fluid. However the complication of the power law fluids lies in the non-linearity and the difficulty to identify the process and material parameters. In this work we make use of the proper generalized decomposition ability to overcome the curse of dimensionality and solve the non-linear problem for any value of the material and process parameters. Later on, the experimental results published previously are used to identify the process parameters.



Concrete mixing