Imperial College London

Amin Nadimy

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Background

2016-2019
BEng Petroleum Engineering
University of Leeds – First Honour

2019-2020
MSc Advanced Chemical Engineering
Imperial College London - Distinction

BEng Final Project

Development of a heavy oil sands reservoir in Cold Lake - Alberta

- Geological valuation of the field
- Drilling strategy
- Designing the drillstring and BHA

MSc Final Project

Modelling Direct Cat-convrsions of natural gas to value-added chemicals

- gPROMS
- Catalyst performance
- Upscalling
- Economic evaluation

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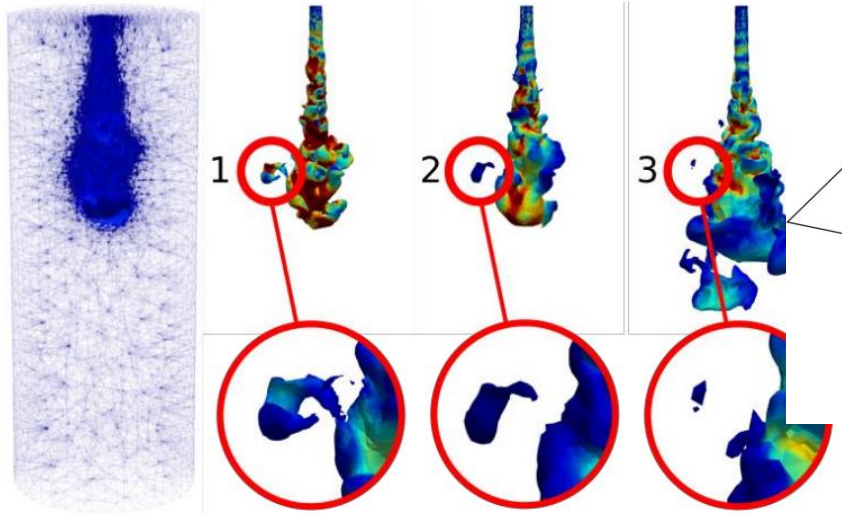
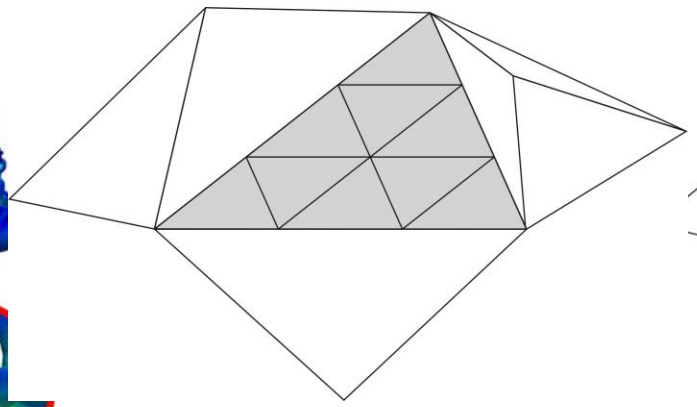
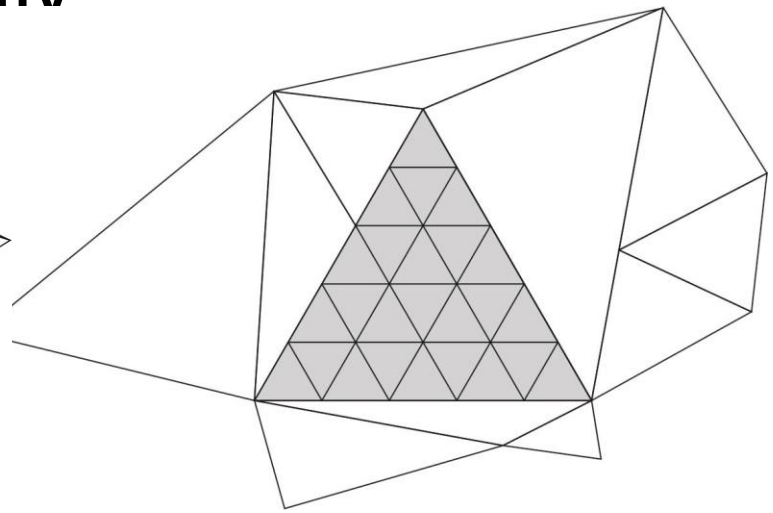
PhD project

Dynamic semi-structured meshes for fast numerical simulation of Multi-Phase Modelling the energy industry







Supervisors:
Professor C. C. Pain, Dr P. Salinas, Dr A. I. Obeysekara and Dr A. Nicolle (BP)

Applied Modelling and Computational Group, Department of Earth Science and Engineering

AMCG

ICL-ICAM-BP Meeting

13th November 2020

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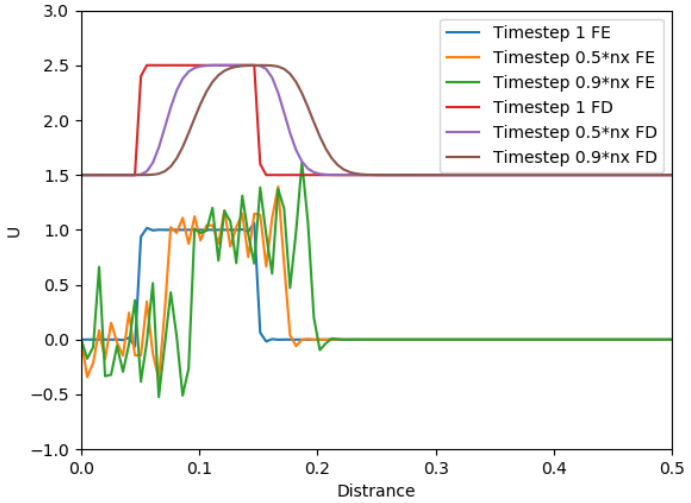
My progress

Week 1 (03 October 2020)
1D 1st order square wave using Finite Difference Method (FDM)

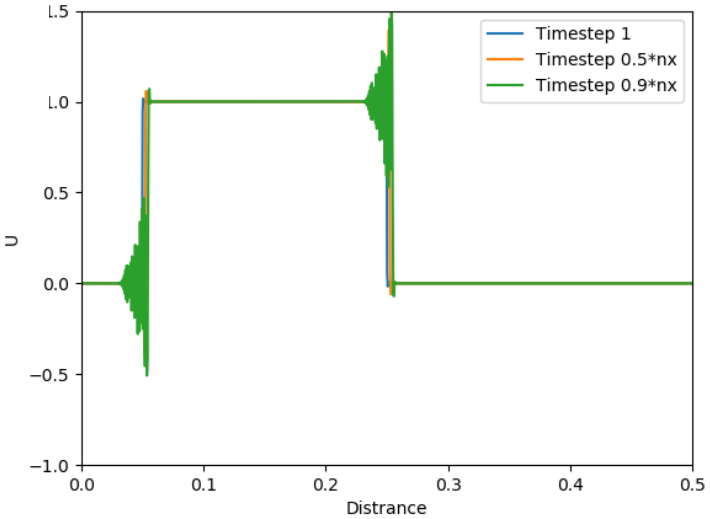
- Mathematical formulations in LaTex
- Implemention in Python

Week 2
The same problem in Finite Volume Method (FVM)

Week 3 - present
Studying the same problem using CG and DG Finite Element Method (FEM)



Number of time steps=100, number of elements=100, Courant Number=0.1, velocity=0.1



Number of time steps=100, number of elements=1000, Courant Number=0.1

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Regular weekly meetings

- Amin's catch-up with AMCG
- BP catch-up
- Brainstorming optimization
- Porous media/Inertia

Extra courses and trainings

•Introduction to Python
•Introduction to Fortran
•HPC
•GTA training
•LaTex
•Using Git to Code and Share
•The Linux Command Line for Scientific Computing

Near-future work

- 2D 1st order square wave in FDM, FVM and FEM
- semi-structured 2D DG FEM.
- I will work with Prof. Pain and others on the Fortan code for semi-structured and with space-time within ICFERST/FLUIDITY.

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Future work