Eagre/Aegir: High-Seas Wave-Impact Modelling

WP1- ExtremeWaves: Extreme water-waves computational modelling using advanced geometric methods with wave generation, breaking, and currents

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Self-introduction

Yang Lu, Marie Curie Early-Stage Researcher for the project "ExtremeWaves" (November 2020 –)

■ Education

- ☐ Sept. 2017 – June 2020   Xi'an Jiaotong University   Master of Engineering
- ☐ Sept. 2013 – June 2017   Xi'an Jiaotong University   Bachelor of Engineering

■ Research Experience

Numerical simulation of multiphase flow through lattice Boltzmann method (LBM)

- ☐ Droplet dynamics: Deformation and breakup of a compound droplet in three-dimensional oscillatory shear flow
  https://doi.org/10.1016/j.ijmultiphaseflow.2020.103472

- ☐ Contact line dynamics: Lattice Boltzmann simulation of three-phase flows with moving contact lines on curved surfaces
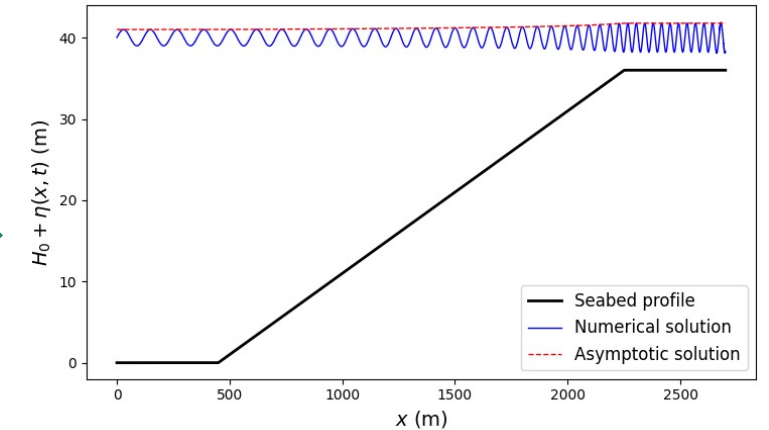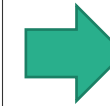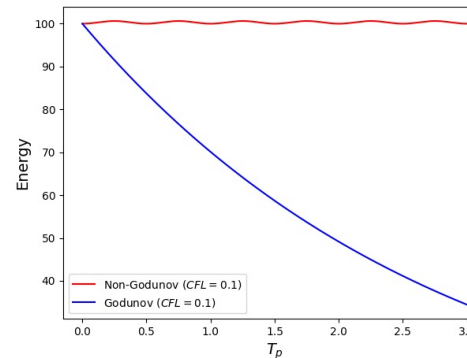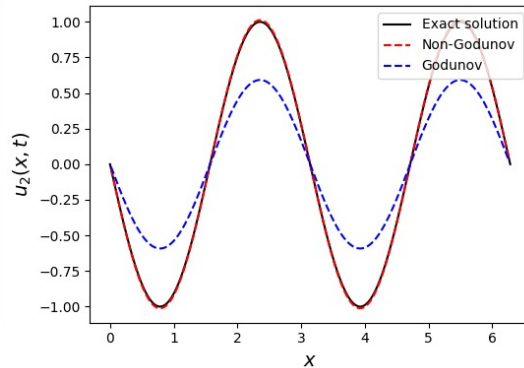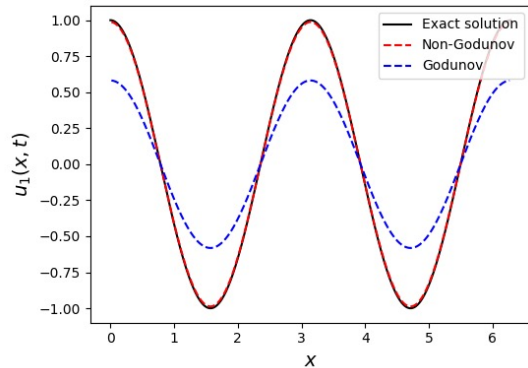
■ MATH5453M Foundations of Fluid Dynamics

❑ fundamental theoretical concepts of fluid dynamics
❑ principle numerical methods: Finite Difference, Finite Volume & Finite Element Methods (N3)

linearised shallow-water systems of equations

Predict surf height at beaches

■ COMP5454M Fluid-Structure Interactions

❑ derivation of the equations of motion for water-wave dynamics using **variational principle**
❑ literature review topic: fluid models used in fluid-solid interaction problems

Progress review -Training and outreach

■ Short-term training sessions

❑ PGR Core Language Skills

- o Reading Critically to Write Critically Workshop
- o What is proofreading and how do I go about doing it
- o Writing Purposefully Workshop
- o Reading to Improve Writing Workshop
- o Grammar A/B Workshop

❑ Outreach Training for mathematics and fluid dynamics (by Dr Katie Chicot, CEO of MathsWorldUK)

■ Preparation for outreach activities

❑ Social media platform

- o Twitter account
- o Sina Weibo account (https://weibo.com/Eagre)

❑ Personal webpage: https://www1.maths.leeds.ac.uk/~mmyl/

❑ Signed up for a *In2scienceUK* mentoring scheme

EAGRE-Horizon2020 ♂
Official account for the EU EID Project "Eagre/Aegir"

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ExtremeWaves: Extreme water-waves computational modelling using advanced geometric methods with wave generation, breaking, and currents

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Thank you!