

SHORT COURSE: DETONATION & EXPLOSIVES MODELLING

The Course

This three day modular course is aimed at personnel in the mining and explosives industries who wish to familiarise themselves with recent developments in the field of explosion and detonation modelling with commercial energetic materials. Attendees should have a background or knowledge of in engineering/mathematical/natural sciences up to equivalent of degree level.

Costs & Contacts

General rate: £1000 for 3 days or £400 per day

Student rate: £500 for 3 days or £200 per day

The registration fee includes:

- Lecture notes
- Refreshments and lunches
- Three course dinner on Saturday evening.
Free only for delegates attending all modules

For info:

<http://www.csc.cam.ac.uk/academic/shortcourses/det2018>

shortcourses@csc.cam.ac.uk (registration/course content)

info@fragblast12.org (accommodation)

Lecturers

Professor Martin Braithwaite (Cambridge),

Professor Sam Falle (Leeds),

Associate Professor Daniel Johansson

(Luleå), Dr Louisa Michael (Cambridge),

Dr Nikos Nikiforakis (Cambridge),

Professor Finn Ouchterlony (Leoben), Dr

Bill Proud (Imperial),

Professor José A Sanchidrián (Madrid)

MODULES

■ Module 1-Introduction (Friday)

- Introduction to the University of Lulea, Swebrec and the three day course
- Introduction to Shock Physics
- Introduction to Detonation
- Ideal Condensed Phase Detonations
- Non-ideal detonation modelling (historical)
- Overview of Detonation Modelling applied to Heterogeneous Explosives
- Ideal Code demonstration/ workshop

■ Module 2-Fragmentation and Blast Modelling (Saturday)

- Fragmentation by Blasting Formulae: A review
- Fragmentation Theory: The Energy Fan
- The Swebrec Distribution
- Fragmentation for Quarry Blasting: A Field Study
- Technologies for Measurement of Fragmentation by Blasting
- Size Distribution Functions: Which One Represents Rock Fragments?
- xP-frag: A Fragmentation Prediction Formula based on dimensional analysis and calibrated with sieve data

■ Module 3-Advanced Simulation Methods (Sunday am)

- Numerical Methods for Compressive Reactive Flow
- Multi-Physics Modelling at LSC, University of Cambridge
- Multi-Physics Modelling for Mining and Defence Industries

■ Module 4-Experimental Characterization (Sunday pm)

- Studies at FOI/ Lulea
- Studies at the Shock Physics Institute, Imperial College
- Round-up/ Open Forum and tour of University of Lulea facilities

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