

LJLL, CASTS & TWSIAM activity group

# A programming language

## for the FEM :

27-28 May, 2014

# FreeFem++

Mathematics Research Center Building, NTU

FreeFem++ is an open source partial differential equation solver developed by Frédéric Hecht, in collaboration with Olivier Pironneau, Jacques Morice, Antoine Le Hyaric and Kohji Ohtsuka, in the Laboratory Jacques-Louis Lions (LJLL) of University Pierre et Marie Curie (Paris, France).

**No registration fee and lunch box will be provided.**

## Day 1 Tuesday, May 27th 2014

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### Part 1: Talk, 3 pm-4:30 pm

Speaker: F. Hecht

#### This talk focuses on:

- \* the latest capabilities of FreeFem++ to solve PDEs using finite element methods,
- \* academic examples,
- \* how an academic solver could be used for advanced and industrial applications.

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### Part 2: Expert tutorial, 4:45 pm-6:45 pm

Speaker: F. Hecht

**This discussion session is held to help researchers to perform their own applications using FreeFem++.**

## Day 2 Wednesday, May 28th 2014

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### Part 3: Basic tutorial, 3 pm-4:30 pm

Speaker: Yannick Deleuze

**This basic tutorial will provide useful information to generate a mesh, solve a linear PDE, use a formulation with matrices and solve examples with steady and time evolution model PDEs.**

**This session is very useful for undergraduate students in studying numerical method and engineering mathematics courses.**

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### Discussion session, 5 pm-6 pm

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### Seminar talk, 2 pm-2:45 pm

Title: **Scalable Domain Decomposition Preconditioners in FreeFem++**

Authors: **F. Hecht, P. Jolivet, F. Nataf**

Speaker: **F. Hecht**

#### Call for contributions:

if you want to give a talk related to FreeFem++, or if you have a specific subject or issue to be discussed, please send a title and a short abstract before May 10th to [yannick.deleuze@ljl.math.upmc.fr](mailto:yannick.deleuze@ljl.math.upmc.fr)

**Organizers:** Marc Thiriet, Yannick Deleuze, Tony W.H. Sheu

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**Link:** <http://homepage.ntu.edu.tw/~twhsheu/twsiamff++/freefem.html>