



Marie Lhande-Pincemin



Karim Azoum



**CCFR** CENTRE  
DE COMPÉTENCE  
HPC.HPDA.IA

# HPC Platform for Enhanced OpenFOAM Performance: A Comparative Analysis



**Guillaume Trainar**  
Sales Director



**Sam Zakrzewski**  
Senior Solutions Architect



The CCFR logo is displayed in large gold letters. To its right is the text 'CENTRE DE COMPÉTENCE HPC.HPDA.IA'. Below the logo are logos for partner organizations: Inria, CERFACS, CRIANN, and the HPC Center ROMEO (Centre de Calcul Régional). To the right of these is the Teratec logo. At the bottom of this section is the MESoNET logo, which includes a map of France with blue dots representing mesocentres, and the text 'With the participation of MesoNET, which involves the 21 mesocentres'.

## HPC- HPDA-IA-Quantum Computing Industry, Academia, Public Administration

- Support on the use of this technologies (POC, projects...)
- Trainings
- Events
- Marketplace (Hardware, software, consulting, Access to HPC resources, trainings, events, jobs)

[www.cc-fr.eu/formations](http://www.cc-fr.eu/formations)

**In 2023 we realised 20 free trainings from 1 day to 5 days**

- **2 in simulation**
- **9 in AI (ML and DL)**
- **6 in HPC**
- **3 in Quantum Computing**

**>350 persons participated to our trainings, 15 from Europe**

- **277 from academia**
- **65 from industry**
- **9 from public administration**

**The training  
program for 2024  
is currently being  
finalized**



[www.cc-tr.eu/formations](http://www.cc-tr.eu/formations)



[CC-FR Newsletter](#)

## Webinars in 2023: [www.cc-fr.eu/actualites](http://www.cc-fr.eu/actualites)



**ParaView**  
Explorez et visualisez vos données massives avec ParaView  
Mardi 7 novembre 2023  
11h-12h  
Inscription obligatoire  
François Mazen, directeur adjoint division visualisation scientifique  
Kitware



**GuixHPC**  
Reproducible software deployment for high-performance computing  
Workshop on Reproducible Software Environments for Research and HPC  
8 to 10 November 2023  
Montpellier (SupAgro)  
Program & Registration



**OpenFOAM**  
OpenFOAM la CFD open source accessible à tous ?  
Mardi 14 novembre 2023  
11h-13h  
Inscription obligatoire  
Alexis Lapouille, Chairman | CFD Manager  
Yann Recoquillon, Responsable Formation  
ACE ENGINEERING



**OpenFOAM**  
OpenFoam, the open source CFD alternative ?  
•Subcontract or invest ?  
•Commercial codes Vs Open source  
28 november 2023, 11h-13h  
Registration required  
Alexis Lapouille, Chairman | CFD Manager  
Yann Recoquillon, Training manager  
ACE ENGINEERING

2023  
>340 Participants

Visualisation - Reproducible software - CFD



**Webinars in 2024:** [www.cc-fr.eu/actualites](http://www.cc-fr.eu/actualites)

**QUANTIQUE**

Calcul Quantique :  
De la recherche à l'industrie  
Jeudi 7 décembre 2023  
11h-13h

Inscription obligatoire

Félix Givois Genci  
Jean-Baptiste Latre Qualitative computing  
Daniel Vert Systematic  
Frédéric Mauguière ROMEO

**ACE OF AIRCRAFT**

Flow simulation for the drone  
and the light aircraft industries  
December 12, 2023: 12h-14h

Inscription obligatoire

Alexis Lapouille  
Yves Leconte | CFI Manager  
Responsible Formation

ACE ENGINEERING

# 2023

# >340 Participants

Quantum Computing - Cloud computing - Visualisation

## Webinars in 2024: [www.cc-fr.eu/actualites](http://www.cc-fr.eu/actualites)

### / OpenFOAM

HPC Platform for Enhanced OpenFOAM Performance: A Comparative Analysis

Tuesday 23 January 2024  
11h-12h



Registration needed



**Sam Zakrzewski**  
Senior Solutions Architect



**Guillaume Trainar**  
Sales Director



### ParaView

Explore and visualize massive datasets with ParaView

Tuesday 30 January 2024  
11h-12h



Inscription obligatoire



**François Mazen**,  
Assistant Director  
for the Scientific  
Visualization team



Quantum Computing:  
From research to Industry  
27-02-2024, 10h-12h



**Jean-Baptiste Latre**  
Qualitative Computing



**Olivier Hess**  
EVIDEN



**Félix Givois**  
GENCI



**David Maier**  
SURF



**Victor Land**  
QuSoft  
Research Center for Quantum Software



**Daan Kuitenbrouwer**  
Delft Circuits  
Hardware for quantum engineers

## Webinars in 2024: [www.cc-fr.eu/actualites](http://www.cc-fr.eu/actualites)



- 25/01/2024 -10h : Présentation de la Gray Scott School
- 01/02/2024 -10h : Architecture CPU
- 08/02/2024 -10h : Précision des calculs
- 15/02/2024 -10h : Profilage mémoire (MALT, NUMAPROF)
- 22/02/2024 -10h : Calcul en C++ 17/20/23
- 29/02/2024 -10h : Le langage Rust
- 07/03/2024 -10h : Bibliothèque de calcul Eve en C++ 20
- 14/03/2024 -10h : Architecture GPU
- 21/03/2024 -10h : Fortran (langage, OpenACC)
- 28/03/2024-10h : Calculer sur GPU en C++ 20 avec NVC++ et CUDA
- 04/04/2024 -10h : Calculer avec Sycl en C++ 20 sur CPU et GPU
- 11/04/2024 -10h : Calculer avec Numpy en Python
- 18/04/2024 -10h : Calculer avec Rust sur CPU et GPU
- 25/04/2024 -10h : Calculer sur CPU et GPU en Fortran avec NVfortran et OpenACC
- 16/05/2024 -10h : Python sur GPU : cunumerics / Legate / Tensorflow

**Programming and  
optimization on  
heterogeneous  
architecture**

**Webinars link to  
the Gray Scott  
School**

# GRAY SCOTT SCHOOL

2E EDITION : 1-12 JUILLET 2024



**UNE ECOLE UNIQUE ET GRATUITE SUR LE HPC !**  
PROGRAMMATION ET OPTIMISATION SUR ARCHITECTURES HETEROGENES



WEBINAIRE DE PRESENTATION :  
**JEUDI 25 JANVIER - 11H/12H**

*organisé par :*



*avec la participation de :*



130 users, 50 organisations, 660 service offerings  
Join the CC-FR HPC Ecosystem: [www.cc-fr.eu/inscription](http://www.cc-fr.eu/inscription)

- Create your user account
- Create the account of your organisation
- Register offers:
  - ✓ Hardware,
  - ✓ Software,
  - ✓ Consulting,
  - ✓ Access to computing resources
  - ✓ Trainings, events, jobs



Marketplace CC-FR services  
Found experts, organization,  
targeted solution

- ✓ User profiles
- ✓ Organisation profiles
- ✓ Services: Hardware, software, consulting,
- ✓ Access to computing resources
- ✓ Trainings, events, jobs

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organisé par :



**Pierre Aubert**  
LAPP - CNRS/IN2P3 - USMB



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EVIDEN



Félix  
Givois  
GENCI  
Le Géoportail au service de la connaissance



David  
Maier  
SURF



Victor  
Land  
DuSoft  
Research Center for Quantum Software



Daan  
Kuitenbrouwer  
Delft Circuits  
Hardware for quantum engineers

# CCFR

CENTRE  
DE COMPÉTENCE  
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in partnership with:



with the participation of 21 Mesocentre:



[cc-fr.eu](http://cc-fr.eu)



MarketPlace

[cc-fr.eu/register](http://cc-fr.eu/register)



[twitter.com/EuroCC\\_France](https://twitter.com/EuroCC_France)



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