



# SUMMER SCHOOLS 2018

## NUMERICAL ANALYSIS

June 25 to June 29, 2018

*ARITHMETIQUE ET PERFORMANCE  
DES CODES*

NOUVEAUX OUTILS POUR LA VERIFICATION  
NUMERIQUE  
DES CODES HPC  
*Bruno LATHUILLIERE  
(EDF R&D)*

ALGORITHMES REPRODUCTIBLES  
PERFORMANTS  
*Stef GRAILLAT  
(Sorbonne Université)*

OPTIMISATION DE LA PERFORMANCE  
EN PRECISION MIXTE  
*Cindy RUBIO-GONZALES  
(Univ. Of California, Davis)*

## COMPUTER SCIENCE

July 2 to July 6, 2018

*AN INTRODUCTION TO MACHINE  
LEARNING AND HIGH  
PERFORMANCE WITH JULIA*

INTRODUCTION TO JULIA :  
*What makes Julia special  
The two Language Problem :  
Julia is easy to use  
Julia is fast  
Generic Programming  
Multiple Dispatch  
Macros and DSLs*

MACHINE LEARNING  
*Deep Neural Nets  
Build Your Own Handwriting Recognizer  
Automatic Differentiation / Back Propagation  
The Whole Alphabet Soup:  
RNN, CNN, LSTM*

HIGH PERFORMANCE COMPUTING  
*Performance Benchmarking  
Faster Serial Computing  
Distributed Computing  
GPU Computing  
Multithreading*

Jane HERRIMAN  
(Caltech & Julia Computing Inc.)  
&  
Alan EDELMAN  
(MIT & Julia Computing Inc.)

– Hands on session –

– Seminars: various conferences by international specialists –

Coordinator of the Numerical Analysis Summer School

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Website: [www-hpc.cea.fr/SummerSchools2018.htm](http://www-hpc.cea.fr/SummerSchools2018.htm)

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**Registration Deadline: May 25, 2018**

Summer schools are intended for researchers, engineers and PhD students.

They allow them to review the state of progress of the proposed subjects and to confront their experience.

The teaching is done in English. It is complemented by practical works, in small groups, hosted by assistants.

Summer Schools will take place at Sorbonne Université - Campus Jussieu - Paris 75005 - FRANCE

Cost of the registration:

Computer Science school (5 days) / Numerical Analysis school (5 days) :

Full rate: € 1200 (pre-tax price) - Universities and public research institutes: € 600 (pre-tax price) - PhD students: € 300 (pre-tax price)