

Workshop on “Adaptive finite element methods”

July 2 – 7, 2021

by

*Indian Institute of Technology Bombay and
Scheme for Promotion of Academic and
Research Collaboration*



Invited speakers

Prof Carsten Carstensen



After a double education in civil engineering and mathematics in Hanover, some time in Edinburgh and Darmstadt, he held chairs in Kiel and Vienna before he joined the Humboldt-Universität zu Berlin in 2004. He has written more than 280 papers with google h-index 55 and more than ten thousand citations with many publications listed in Math. Comp., SINUM, Numer. Math. He was a long-term editorial board member of Math. Comp and SINUM and is acting for decade as the EiC of CMAM. His research interests on computational partial differential equations include many aspects in computational mechanics. He had 20 PhD students and supervised 10 postdocs, who later became themselves professors in Germany or Austria. He is mainly known for his work in computational nonlinear partial differential equations or the a posteriori error control and adaptive finite element methods. He received the von-Mises prize and is correspondent member of the academy Mainz.

Dr Ornella Mulita



After completing the PhD programme in mathematical analysis, modelling and applications at the International School of Advanced Studies (SISSA) in Trieste (Italy) in 2019, accompanied with a visiting research period at Durham University (UK), she is currently a post-doctoral researcher at the Numerical Analysis group of Prof. Carsten Carstensen at the Humboldt-Universität zu Berlin. Her research interests lie in numerical analysis and scientific computing, with particular emphasis on the numerical approximation of PDEs and mesh adaption techniques for PDEs and eigenvalue problems. In parallel to her studies, she has completed several graduate and postgraduate teaching positions in numerical analysis at the University of Trieste.

Organisers

Prof Carsten Carstensen (Humboldt-Universität zu Berlin)

Prof Neela Nataraj (IIT Bombay)

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Scheme for Promotion of Academic and Research Collaboration

July 2, Friday		
Slot (Germany)	Slot (India)	Topic
11.00 – 13.00	14.30 – 16.30	L1, L2
14.00 – 15.00	17.30 -18.30	L3
15.00 – 16.00	18.30-19.30	Discussion/ Tutorial

July 5, Monday		
Slot (Germany)	Slot (India)	Topic
9.00 – 11.00	12.30 – 14.30	L4, L5
12.00 – 13.00	15.30 -16.30	L6
13.00 – 14.00	16.30-17.30	Discussion/ Tutorial

July 6, Tuesday		
Slot (Germany)	Slot (India)	Topic
11.00 – 13.00	14.30 – 16.30	L7, L8
14.00 – 15.00	17.30 -18.30	L9
15.00 – 16.00	18.30-19.30	Discussion/ Tutorial

July 7, Wednesday		
Slot (Germany)	Slot (India)	Topic
9.00 – 11.00	12.30 – 14.30	L10, L11
12.00 – 13.00	15.30 -16.30	L12
13.00 – 14.00	16.30-17.30	Discussion/ Tutorial

- L1. Data and algorithms for FEM
- L2. Convergence and divergence
- L3. Adaptive mesh-refining
- L4. Admissible triangulations
- L5. Overhead control
- L6. Axioms of adaptivity

- L7. Optimal convergence rates
- L8. Poisson model problem
- L9. Quasi interpolation
- L10. Stokes equation
- L11. Biharmonic equation
- L12. Morley FEM

*Interested participants may send their cv to the email afemconf@gmail.com.
Knowledge in modern PDE theory and finite element methods is a pre-requisite.
Last date of application is **15th June 2021**.*