IIT Kanpur – University of Heidelberg Collaborative Workshop on

DEAL.II – An Open Source Finite Element Library
(Feb 29, 2020 – Mar 2, 2020)

About DEAL.II :
DEAL.II originally emerged from work at the Numerical Methods Group at Universität Heidelberg, Germany, which is at the forefront of adaptive finite element methods and error estimators. Today, it is a global, open source project maintained by a geographically diverse set of developers, and has dozens of contributors and several hundred users scattered around the world. It is widely used in many academic and commercial projects. For its creation, its principal authors have received the 2007 J. H. Wilkinson Prize for Numerical Software. It is also part of the industry standard SPEC CPU 2006 and SPEC CPU 2017 benchmark suites used to determine the speed of computers and compilers.

Goal of Workshop :
The main aim of DEAL.II is to enable rapid development of modern finite element codes, using among other aspects adaptive meshes and a wide array of tools classes often used in finite element program. Writing such programs is a non-trivial task, and successful programs tend to become very large and complex. We believe that this is best done using a program library that takes care of the details of grid handling and refinement, handling of degrees of freedom, input of meshes and output of results in graphics formats, and the like. Likewise, support for several space dimensions at once is included in a way such that programs can be written independent of the space dimension without unreasonable penalties on run-time and memory consumption..

Eligibility:
Any one with adequate background on "FEM: Theory, Computations & Applications" is welcome to participate.

Criteria:
There will be limited number of seats (~30-35) and all the interested participants must register. It is mandatory that all the registered participants, especially those doing the course work, must completely stay with the workshop for Feb 29, 2020 (Saturday) – Mar 1, 2020 (Sunday). For all other participants it is mandatory to stay with the workshop for the entire period. *All those interested should complete the registration form and get it recommended by your supervisor/HOD and send the same to the contact address below*.

Contact:
Prof. B.V.Rathish Kumar (Workshop Coordinator),

Department of Mathematics & Statistics, IIT Kanpur

Email:deal.2.iitk@gmail.com;

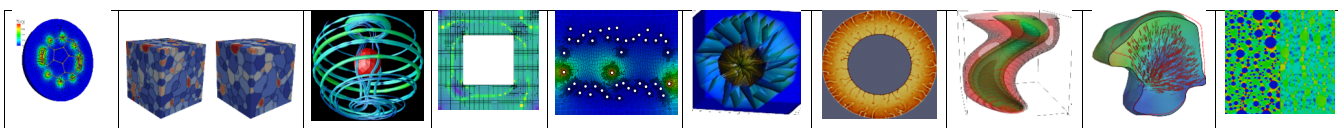**Ph: +91 512 6797660 / 7636**

Resource Person:

Prof. Guido Kanschat studied mathematics at the University of Bonn. In 1992 he moved to Heidelberg University, where he received his doctor of science degree in 1996 and his habilitation in 2004. He spent the academic year 1999/2000 as Visiting Assistant Professor at the University of Minnesota, and between 2006 and 2012 served as Assistant, Associate, and Full Professor at Texas A&M University. In 2012 he joined the Interdisciplinary Center for Scientific Computing (IWR) of Heidelberg University holding the chair for Mathematical Methods of Simulation. Since 2014, he is Associate Dean for Teaching.

Prof. Guido Kanschat works in the fields of Numerical Analysis and Scientific Computing, in particular analysis and implementation of finite element methods. Here, he focuses on applications of Discontinuous Galerkin Methods to applications in radiative transport and coupled flow problems. His work involves the development and analysis of discretization schemes as well as efficient multigrid solvers and their implementation.

He is coauthor and one of the founders of the deal.II software project, which provides Open Source infrastructure for finite element calculations. He was awarded the 2007 Wilkinson Prize for Numerical Software for this project together with Wolfgang Bangerth and Ralf Hartmann. He is founding editor of the Archive of Numerical Software and a strong advocate for Open Source Software and the recognition of the intellectual achievement in numerical software.

Registration Form

1. **Name:**

2. **Contact details: (Address/Roll No./Mob Number/email)**

3. **Qualification:**

4. **Affiliation:**

5. **Background: (Level of Familiarity with FEM with credentials):**

6. **Reason for Participation:**

7. **Any special achievement with FEM (Project/Paper etc.):**

8. **Declaration: "I assure you that I will completely stay with the workshop and seriously take part in its proceedings during Feb 29, 2020 – Mar 1, 2020.**

Signature of the applications:

9. **Recommendation from the Supervisor/HOD:**