

Scientific Computing

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CBC Talk on Adjoint and Suggested Usage in the Cardiac Modelling Domain - June 23, 2014

Dr. Patrick Farrell of Oxford University will give the talk as part of the 2014 SSRI Summer School.

Total number of participants: 17
 Total number of guests outside of CBC: 13
 Number of different nationalities represented: 8
 Total number of speakers: 1
 Total number of talks: 1

About the speaker

My research lies at the junction of mathematics, physics, engineering, and computation. In my thesis and early postdoctoral work, my research focussed on adaptive mesh discretisations: changing the computational mesh in some way to make orders of magnitude efficiency gains in solving complex models. In this work, I solved a problem of computational geometry that had been open in the literature for over twenty years. In my later postdoctoral work, I have focussed on the problem of automatically deriving adjoint models. Adjoint models are absolutely essential for many important problems, such as weather prediction, optimising the shape of wings, and quantifying the accuracy of nuclear simulations. I have developed an entirely new approach to deriving adjoint models, which yields dramatic gains in automation, robustness and efficiency -- in some cases, from years to days. With these methods in hand, it is now possible to contemplate the automated solution of optimisation problems constrained by the laws of physics. Such applications are of huge interest and importance across all of engineering and the quantitative sciences.

What	
When	Jun 23, 2014 from 03:00 PM to 04:00 PM
Where	Storstua @ Simula
Contact Name	Joakim Sundnes
Attendees	Abhishek Murthy Davide Ambrosi Eillean Ao-ieong Giulia Pizzichelli Glenn T. Lines Joakim Sundnes Johan Hake Jonas van den Brink Jussi Koivumäki Karoline Horgmo Jæger Karoline Kalleberg Kimberly McKabe Lars Bonde Patrick Farrell Steffen Docken Tapaswini Das Vegard Vinje Viviane Timmermann
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