

## Scientific Computing

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### CBC Seminar on The Lattice Boltzmann Method and its Application in Modeling of Physiological Flows - October 23, 2014

A seminar will be held at the University of Oslo Thursday 23/10 at 10.15 in B91 (NHA building) by Dr. Jain Kartik titled "The Lattice Boltzmann Method and its application in modeling of physiological flows".



Total number of participants: 13  
 Total number of guests outside of CBC: 9  
 Number of different nationalities represented: 5  
 Total number of speakers: 1  
 Total number of talks: 1

### The Lattice Boltzmann Method and its application in modeling of physiological flows

Time and place: Oct 23, 2014 10:15 AM - 12:00 PM, NHA bygget 9 etg B91

The Lattice Boltzmann Method (LBM) is an alternative technique for the numerical simulation of flows, and the LB equation converges to the incompressible Navier-Stokes equations under the continuum limits of low Mach and Knudsen numbers. The LB method is particularly suitable for transient flows, and the nature of the scheme allows it to scale to parallel supercomputers thereby allowing for simulation of highly complex flows in realistic geometries.

The presentation will concern the basics of the method, its limitations and advantages over classical CFD techniques. The main focus would be the transient nature of the method, and its role in simulating transitional flows at low Reynolds numbers. I will also present our open source LBM solver Musubi which implements complex features of the LB methods and runs on large scale supercomputers. Finally, I will briefly present the results of simulations of transitional in physiological applications, with a discussion on the suitability/drawbacks of the LBM in such applications

<b>What</b>	
<b>When</b>	Oct 23, 2014 from 10:15 AM to 12:00 PM
<b>Where</b>	NHA bygget 9 etg B91 @ UiO
<b>Contact Name</b>	Mikael Mortensen
<b>Attendees</b>	Abusheh Simanesev Endre Joachim Morsige Joa LaCasa Joakim Bø Joris Verschaeve Kartik Jain Magne Nordaas Mikael Mortensen Miroslav Kuchta Shkurta Olluri Tom M. D. Taklo Tormod Landet Vegard Vinje
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