

*FLOW graduate school invites PhD students
and selected master students to a short course on*

Lattice Boltzmann Methods, 4.5 hp

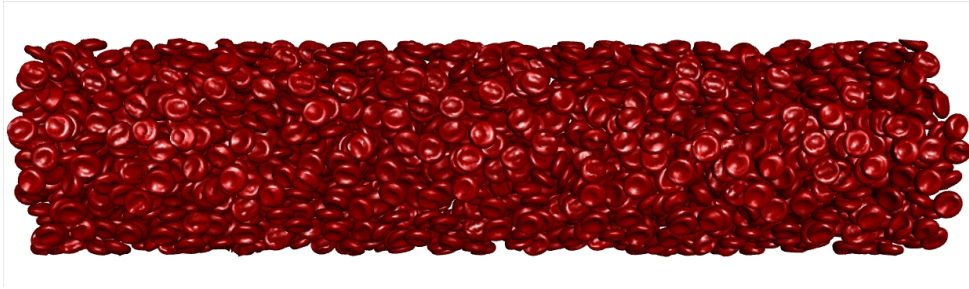


Figure 1: Visualization of 2500 deformable red blood cells suspended at 30% volume concentration in pressure-driven flow inside a tube. Fluid domain is $192 \times 192 \times 768$ with tube $Re = 5.8$ and the membran capillary number $Ca = 0.08$.

How?

The course is taught in four lectures and one seminar Oct. 11-14 followed by a project performed in groups of two or three. The total workload (incl. lectures) should be approximately equal to 3 weeks of full time work. Attendance to lectures and active participation at the project presentations, together with high quality project work reported in a 4-page summary, is required to pass the course. The proposed schedule is found on next page.

Who?

The course will be taught by professor Cyrus Aidun from Georgia Tech, a world leading expert on Lattice Boltzmann methods.

Curious?

If this sounds interesting but you aren't sure whether this course is right for you, Cyrus Aidun, cyrus.aidun@me.gatech.edu, is happy to provide you with more (persuading) details.

Any administrative or organisational question should be addressed to Fredrik Lundell, fredrik@mech.kth.se.

Sign up!

Reserve your place in the course already today with an email to Fredrik Lundell, fredrik@mech.kth.se!

Schedule and others

| Date | Time | Activity | Place |
|-------------|-------------|--|--------------|
| Oct. 11 | 13–15 | <i>Foundations — Kinetic Theory & Boltzmann-Maxwell (B-M) Eq</i> | TBD |
| Oct. 12 | 13–15 | <i>From B-M to lattice-Boltzmann (LB) to Navier-Stokes</i> | TBD |
| Oct. 13 | 13–15 | <i>LB scaling Parallel processing MPI</i> | TBD |
| Oct. 14 | 10.30–11.30 | <i>DNS of noncolloidal particles, deformable capsules and fibers suspended in liquid</i> | S40 TR8 |
| Oct. 14 | 13–15 | <i>Higher Re with Entropic LB</i> | TBD |
| Nov. 5 | 10–12 | Project presentations | TBD |
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Additional timeslots for the project presentations will be added if needed. The course will be reported as SG3030 Current problems in mechanics.