

AN INTRODUCTION TO LATTICE BOLTZMANN METHODS  
FOR COMPLEX FLOW SIMULATIONS

**Final Program**

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**Day 1 – March, 3**

***Location: CNR P.le Aldo Moro***

***Aula Marconi***

- 08.00 – 09.00** Registration
- 09.00 - 09.30** Addressing Speech –Bertsch, M./Bella G.
- 09.30 – 10.15** Opening Lecture – Orszag, S.
- 10.15 – 11.15** Background – Orszag, S.
- 11.15 – 11.45** Coffee break
- 11.45 – 13.45** Basic LB equations – Succi, S.
- 13.45 – 15.00** Lunch break

***Aula Bisogno***

- 15.00 – 16.30** Boundary conditions – Boghosian, B.
- 16.30 – 17.00** Coffee break
- 17.00 – 18.00** Elementary examples – Succi, S.
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**Day 2 – March, 4**

***Location: CNR P.le Aldo Moro - Aula Bisogno***

- 09.15 – 11.15** Advanced collisions and entropic LB – Karlin, I.
- 11.15 – 11.45** Coffee break
- 11.45 – 13.45** Turbulence modelling in LB – Orszag, S.
- 13.45 – 15.00** Lunch break
- 15.00 – 16.30** An introduction to lattice Boltzmann for multiphase flows –Yeomans, J.
- 16.30 – 17.00** Coffee break
- 17.00 – 18.30** Practical examples – Boghosian, B.
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**Day 3 – March, 5**

***Location: CNR P.le Aldo Moro - Aula Bisogno***

- 09.15 – 10.15** Basics of grid refinement – Chopard, B.
- 10.15 – 11.15** Advanced grid refinement –Krafczyk, M.
- 11.15 – 11.45** Coffee break
- 11.45 – 13.45** Implementation issues and data structures – Krafczyk, M.
- 13.45 – 15.00** Lunch break
- 15.00 – 16.30** Irregular grids– Ubertini S.
- 16.30 – 17.00** Coffee break
- 17.00 – 18.30** Multi-species lattice Boltzmann models and practical examples – Asinari, P.
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#### **Day 4 – March, 6**

***Location: CNR P.le Aldo Moro - Aula Bisogno***

- 09.15 – 11.15** Higher order methods beyond Navier-Stokes – Shan, X.  
**11.15 – 11.45** Coffee break  
**11.45 – 12.45** Advanced methods for multi-phase and multi-component flows in LB – Shan, X.  
**12.45 – 13.45** LB hierarchy for microflows – Karlin, I.  
**13.45 – 15.00** Lunch break  
**15.00 – 16.30** LB model for micro and nano fluid – Benzi, R./Biferale, L.  
**16.30 – 17.00** Coffee break  
**17.00 – 18.30** Applications and Practical examples – Benzi, R./ Biferale, L.
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#### **Day 5 – March, 7**

***Location: CNR P.le Aldo Moro - Aula Bisogno***

- 09.15 – 11.15** LBCFD in automotive engineering – Bella, G.  
**11.15 – 11.45** Coffee break  
**11.45 – 13.45** LBM for industrial applications – Famibelle, S.  
**13.45 – 15.00** Lunch break  
**15.00 – 16.30** LBM software (PowerFLOW) for hands on applications– Famibelle, S.  
**16.30 – 17.00** Coffee break  
**17.00 – 18.30** LBM software (PowerFLOW) for hands on applications – Famibelle, S.
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#### **Day 6 – March, 8**

**08.00** Meeting in front of the CNR building in P.le Aldo Moro (to take a private bus)

***Location: Villa Mondragone***

- 09.00 – 11.00** Performance issues for the Lattice Boltzmann Method – Amati, G.  
**11.00 – 11.30** Coffee break  
**11.30 – 13.15** LB and high performance computing – Chopard, B.  
**13.15 – 13.30** Conclusive remarks and diploma  
**13.30 – 15.00** Closing Banquet