

## **Asymptotic analysis of the lattice Boltzmann method**

Michael Junk

Universität des Saarlandes, Saarbrücken, Germany

junk@num.uni-sb.de

We introduce an asymptotic expansion technique for the analysis of lattice Boltzmann methods with the following features:

- order by order information about the lattice Boltzmann solution
- correct prediction of convergence orders
- easy analysis and synthesis of initial conditions, boundary conditions, interface conditions, moving boundary algorithms etc.
- wide scope of application: works for any finite difference scheme