

Construction and analysis of lattice Boltzmann schemes

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- FD, "Equivalent partial differential equations of a lattice Boltzmann scheme", [Computers and Mathematics with Applications](#), vol. 55, p. 1441-1449, 2008.
- FD, "Nonlinear fourth order Taylor expansion of lattice Boltzmann schemes", [Asymptotic Analysis](#), vol. 127, p. 297-337, 2022.
- FD and Pierre Lallemand, "On single distribution lattice Boltzmann schemes for the approximation of Navier Stokes equations", [Communications in Computational Physics](#), arxiv.2206.13261, to appear, 2023.
- FD, [zenodo](#) deposit of the "abcd-ns" software, version v0, in French, doi:10.5281/zenodo.6685127, june 2022.
- FD, Bruce M. Boghosian, Pierre Lallemand, "General fourth-order Chapman-Enskog expansion of lattice Boltzmann schemes", [Computers and Fluids](#), vol 266, 106036, 2023.

Thank you for your attention!

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