Optimisations and Parallelism of d2q9-bgk.c

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Abstract

`d2q9-bgk.c` implements the Lattice Boltzmann methods to simulate a fluid density on a lattice. The original `d2q9-bgk.c` code was unoptimised and not parallelised. This report outlines the techniques I utilised to optimise and parallelise `d2q9-bgk.c`, as well as a detailed analysis of those techniques. To do so, this report is split into several sections corresponding to different iterations of my code.