KTH Engineering Sciences

GPU Simulation of Rigid Fibers

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Abstract

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GPU simulering av stela fibrer

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Chapter 1

Introduction

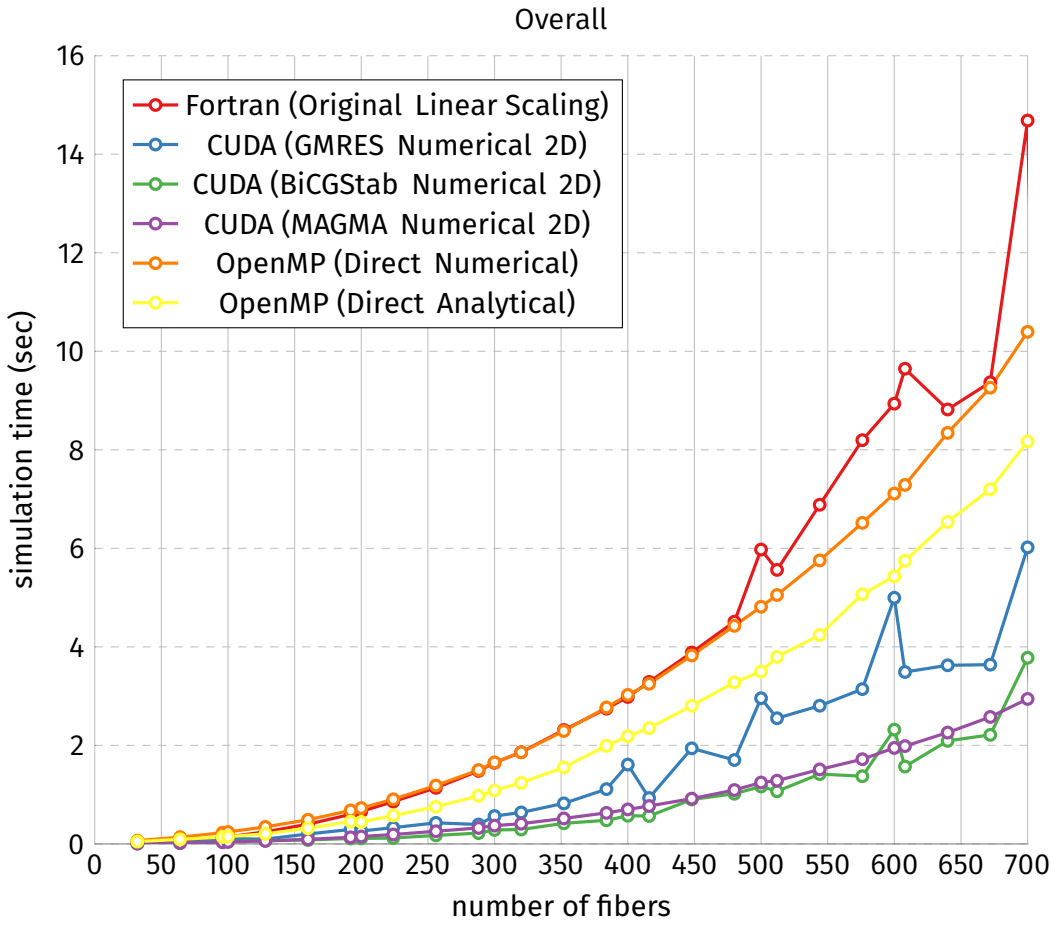

Figure 1.1: Total time per timestep using the average over 10 timesteps. First timestep is excluded as warmup. Assuming linear scaling for Fortran.

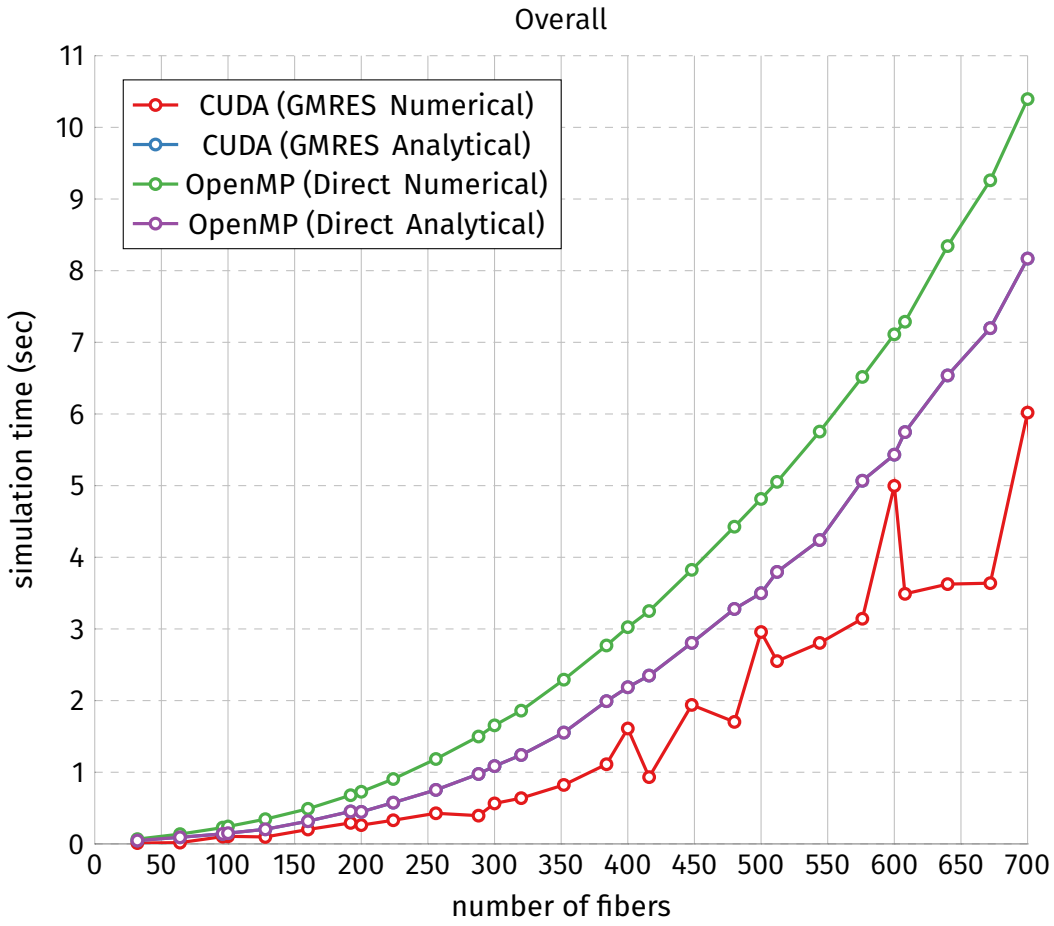

Figure 1.2: Total time per timestep using the average over 10 timesteps. First timestep is excluded as warmup. Assuming linear scaling for Fortran.

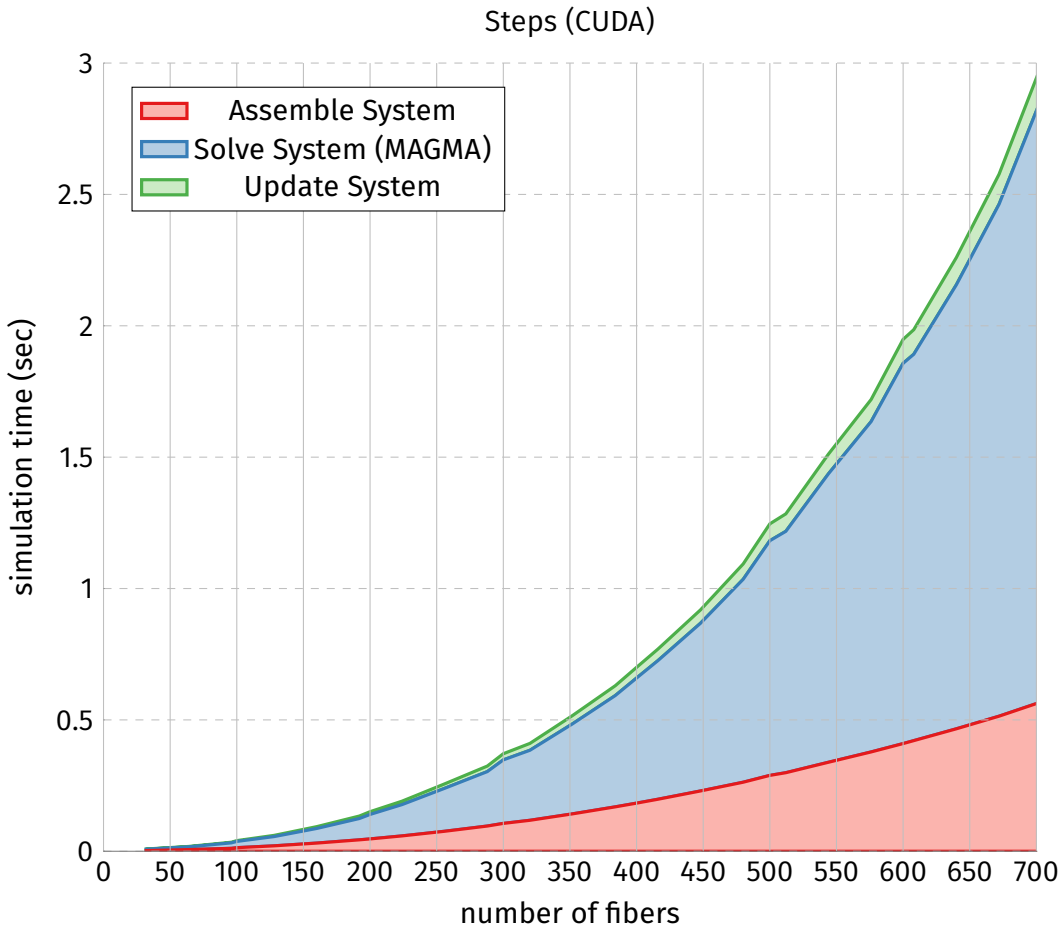

Figure 1.3: Average time for each simulation step over 10 timesteps. First timestep is excluded as warmup.

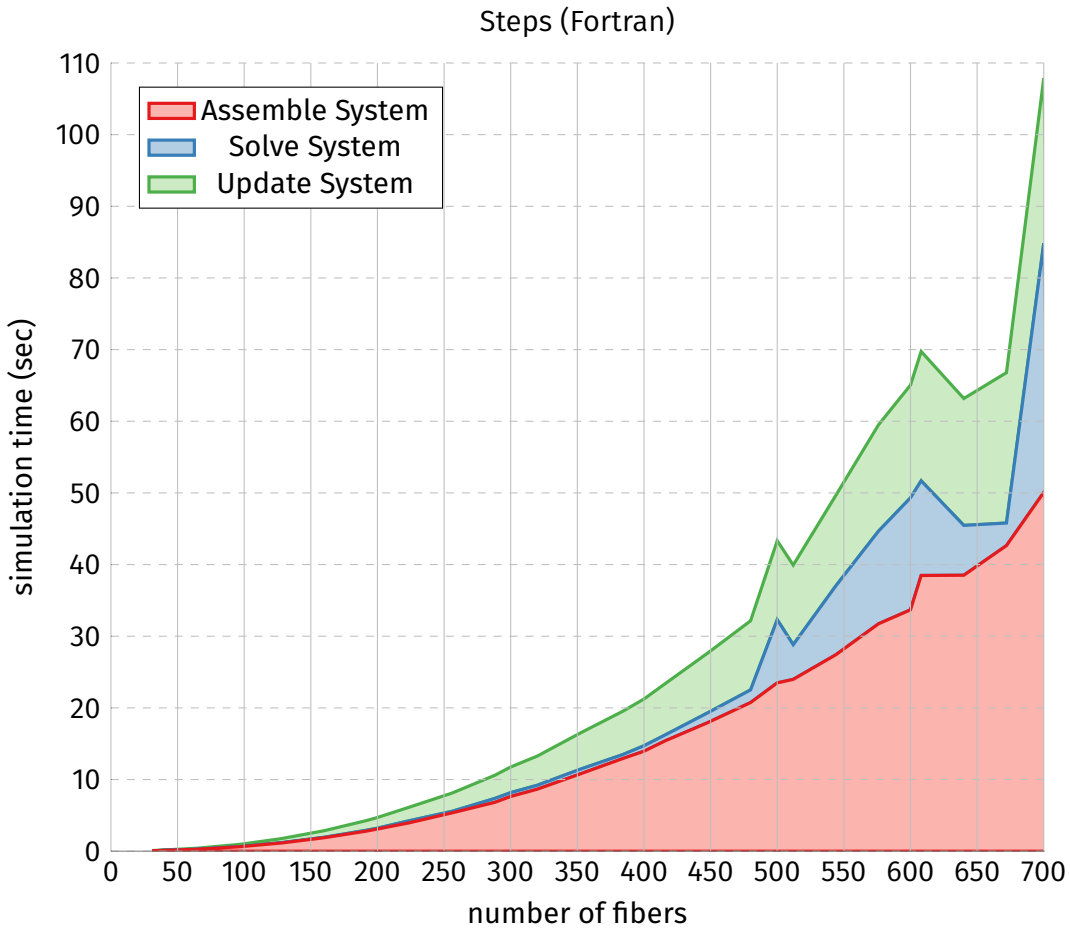

Figure 1.4: Average time for each simulation step over 10 timesteps. First timestep is excluded as warmup. Assuming linear scaling for Fortran.

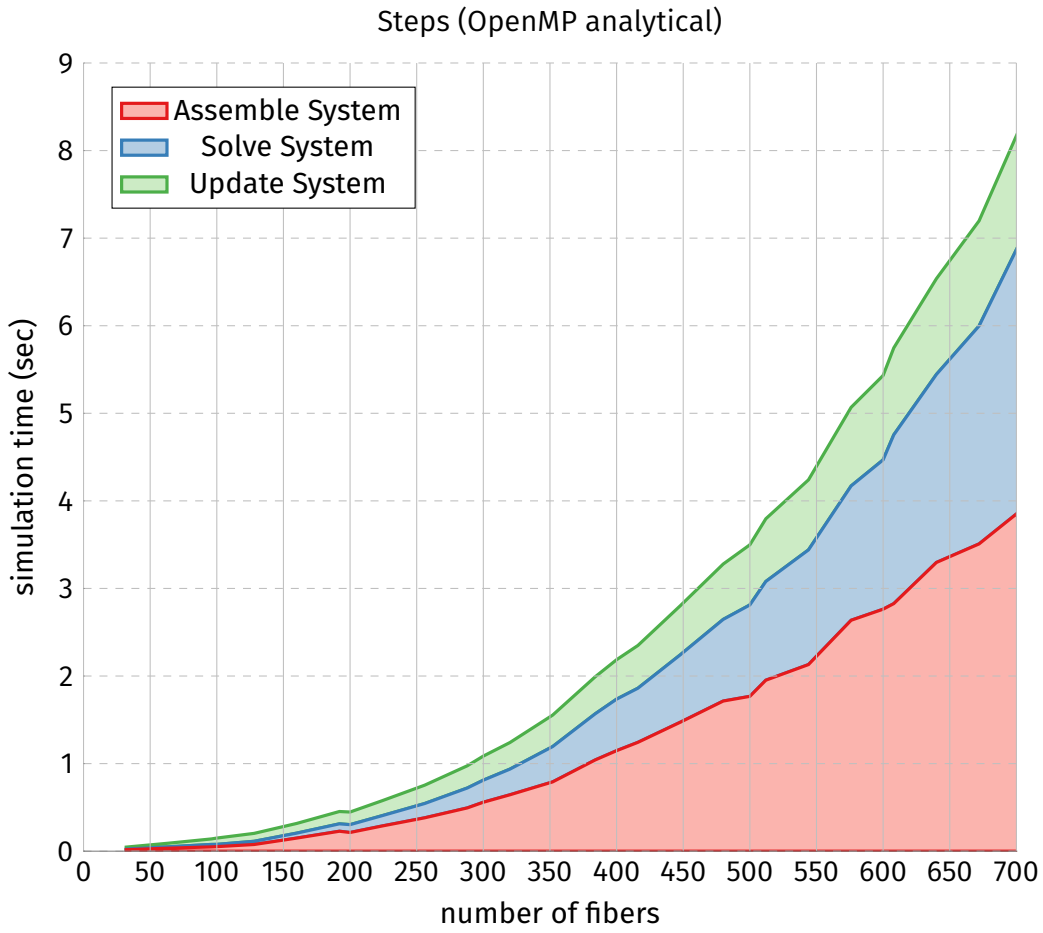

Figure 1.5: Average time for each simulation step over 10 timesteps. First timestep is excluded as warmup. Assuming linear scaling for Fortran.

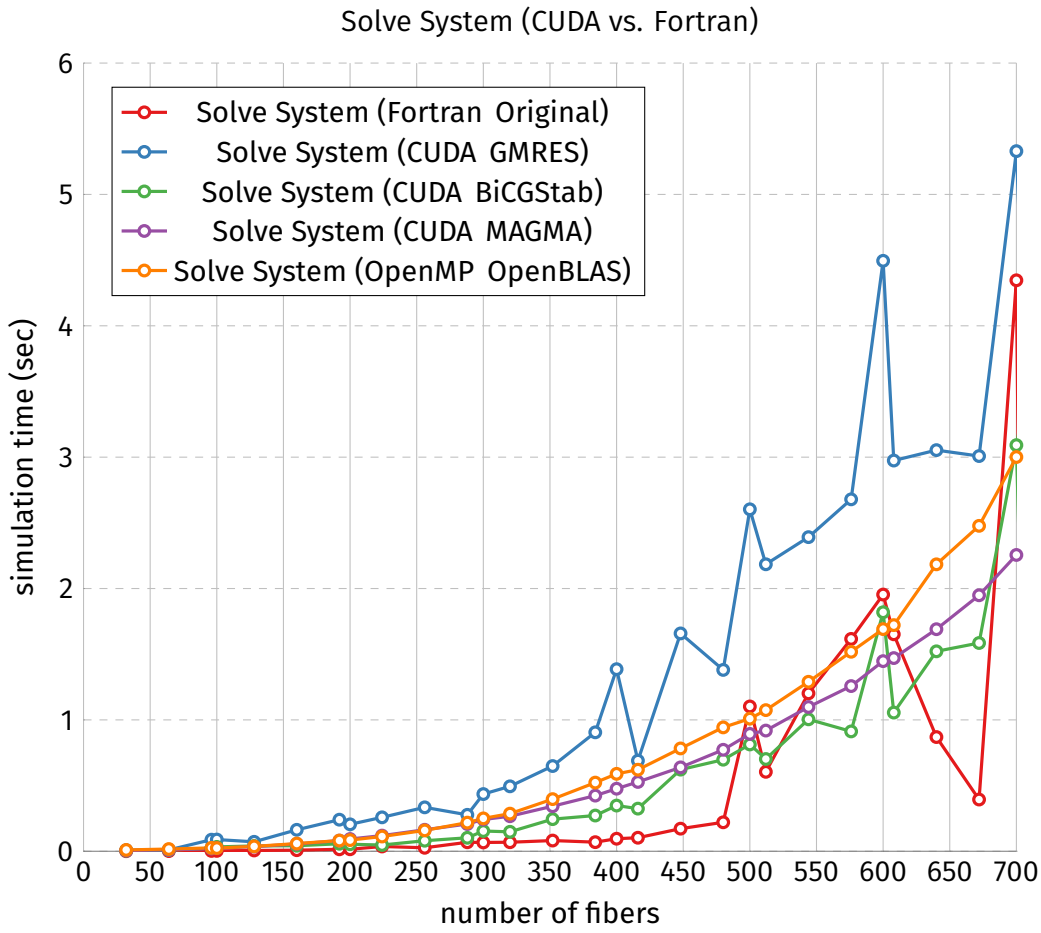

Figure 1.6: Average time for solve system step. Averaged over 10 timesteps (1st excluded). Assuming linear scaling for Fortran.

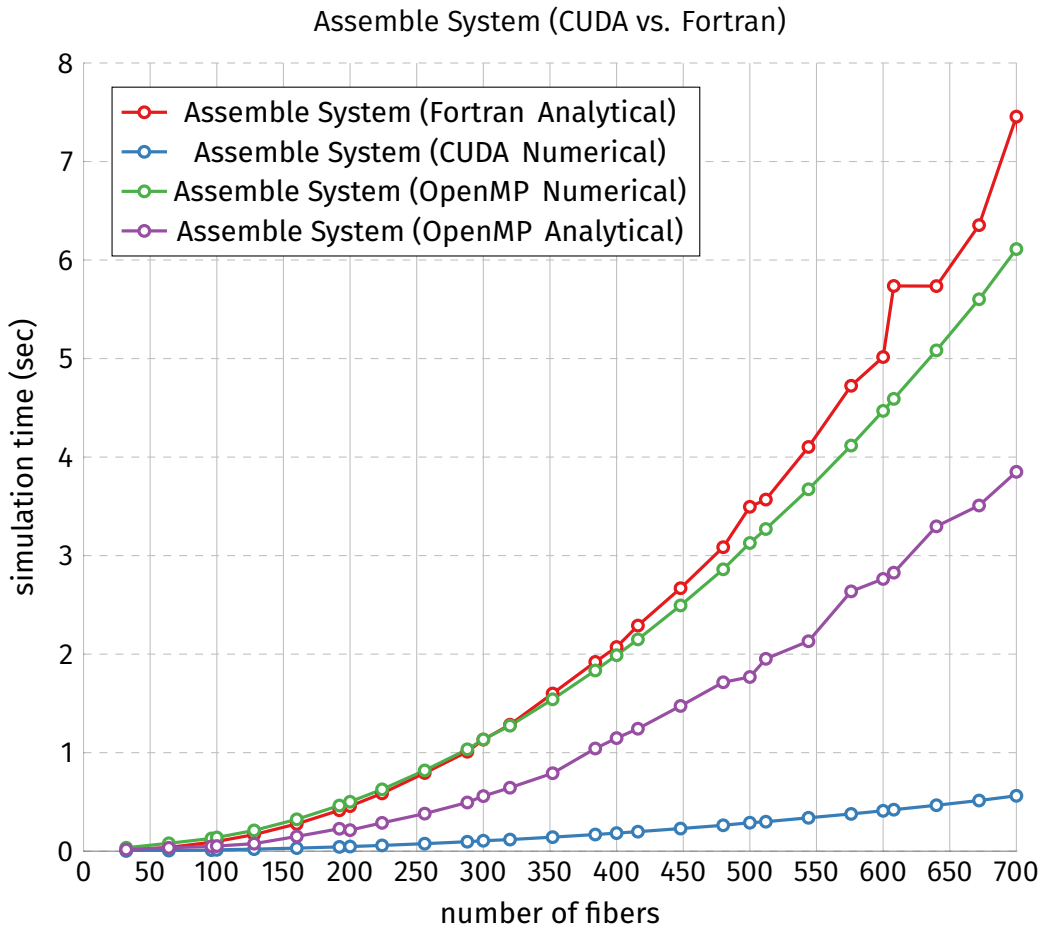

Figure 1.7: Average time for assemble system step. Fortran and CUDA are averaged over 10 timesteps (1st excluded). Fortran New is only 1st timestep. Assuming linear scaling for Fortran.

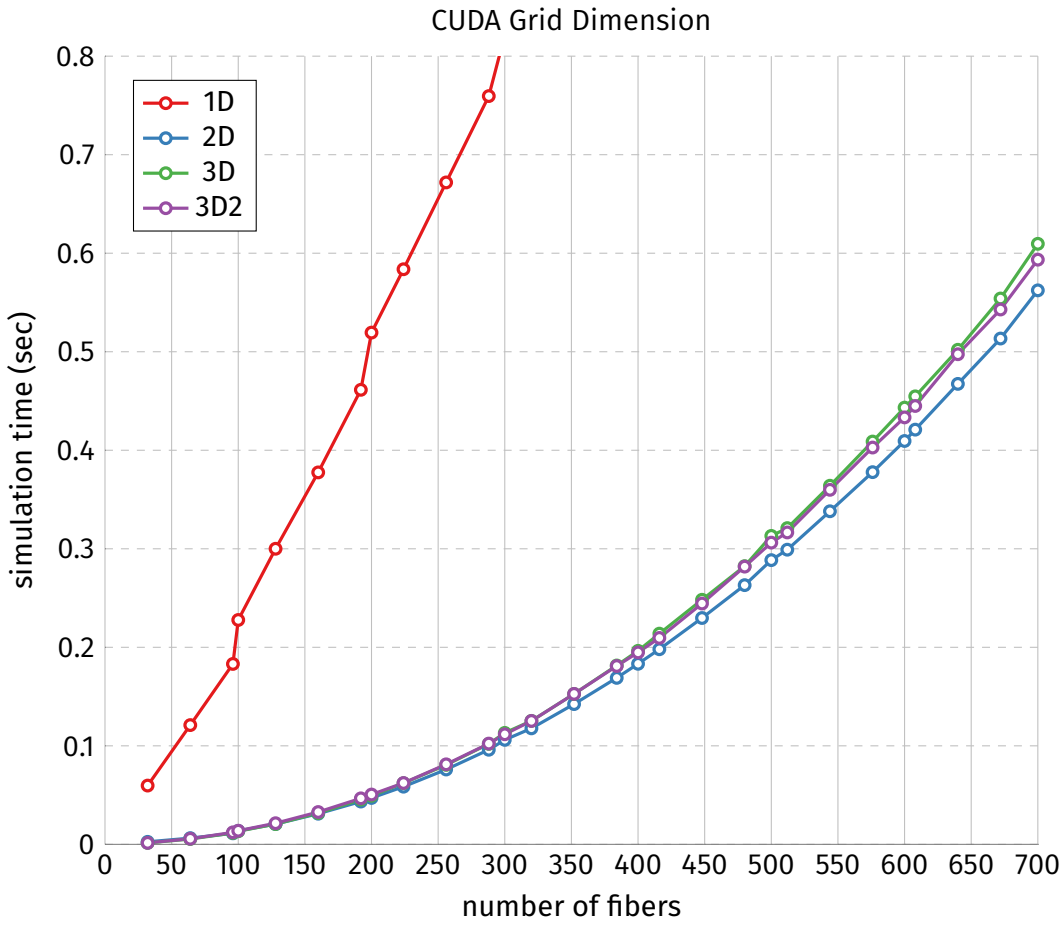

Figure 1.8: Total time per timestep using the average over 10 timesteps. First timestep is excluded as warmup.

Chapter 2

Theoretical Foundation

Chapter 3

CPU Implementation

3.1 Discretization

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GPU Implementation

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Results

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Chapter 6

Conclusion