

1.3.1. from Assignment 1

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1 Finite differences

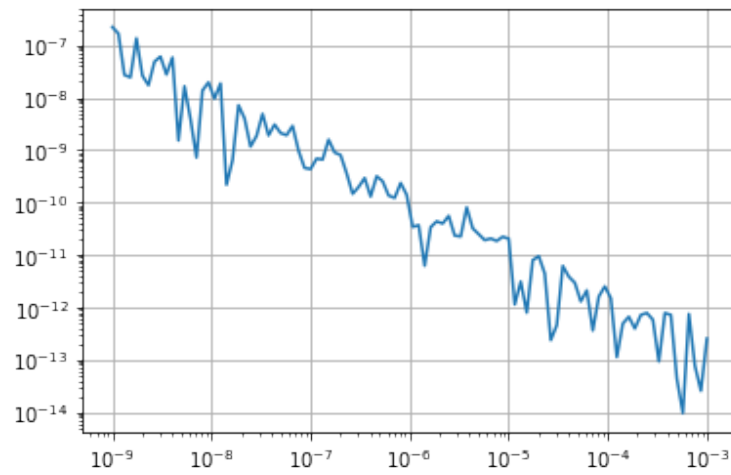


Figure 1: Finite differences. Elastic energy (2.4.3.)

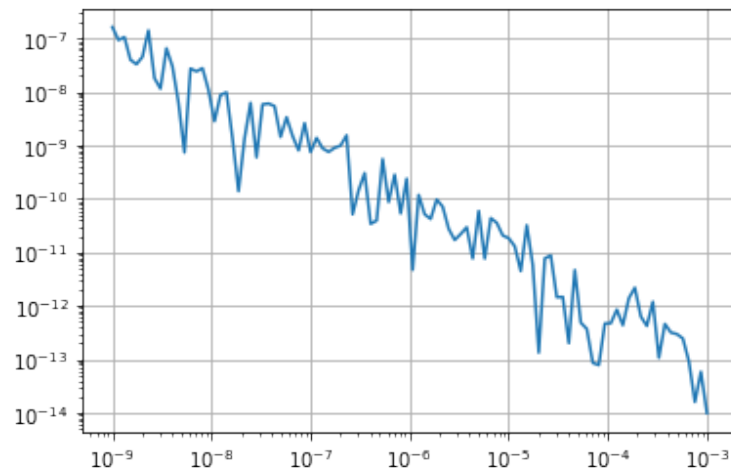


Figure 2: Finite differences. External energy (2.4.5.)

2 Equilibrium solve

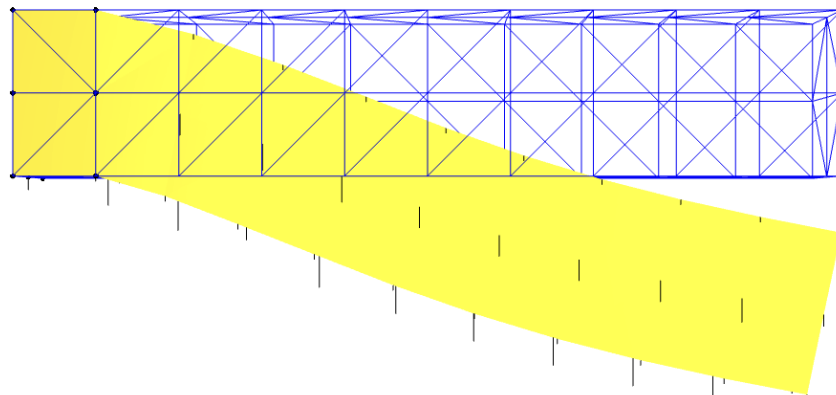


Figure 3: Beam shape optimized with GD

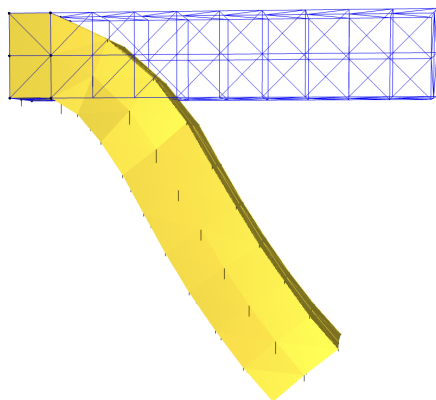


Figure 4: Beam shape optimized with BFGS

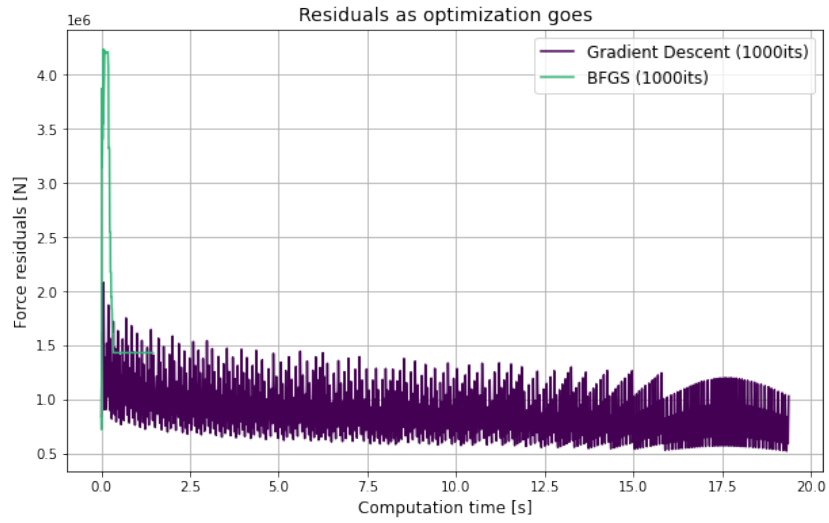


Figure 5: Force residuals throughout computation time for two algorithms.

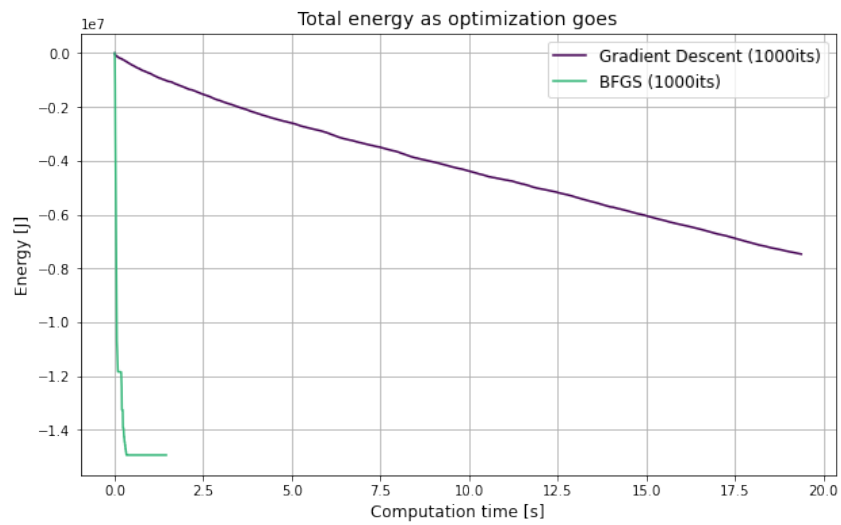


Figure 6: Energy throughout computation time for two algorithms.