

Figure 1: An elastic bar compressed at every node with a force of 10^6 (y coordinates fixed at the end). The Young's modulus is 9×10^4 and the Poisson ratio 0.4. In black dotted line we show the reference configuration. In blue and cyan we show the result of the ADMM and Newton solvers. In this scenario standard FE hits inverted elements and all other solvers give unrealistic solutions.

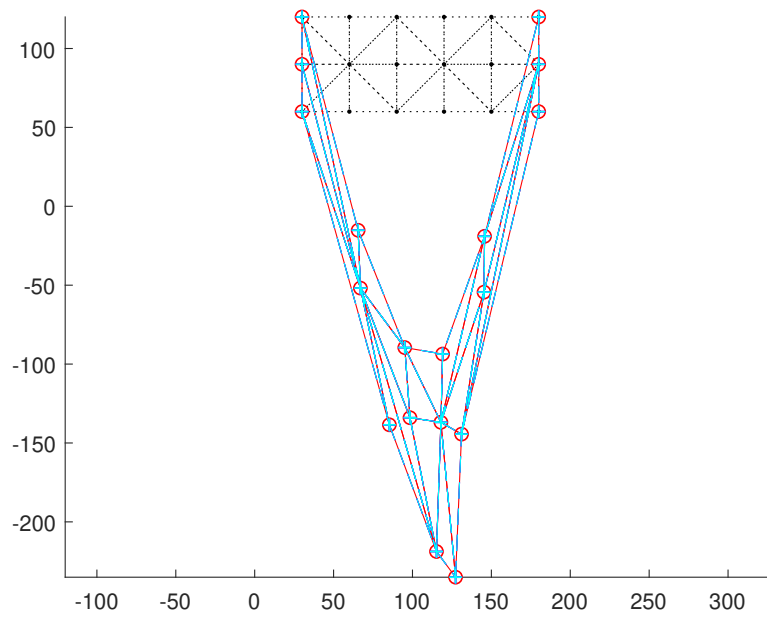


Figure 2: The same bar pressed from the top by nodal forces of 5×10^6 . In solid red and magenta we drew the fminunc and fmincon solutions. The former gives a correct solution but while encountering inverted elements. In blue and cyan we show the ADMM and Newton solutions.