

Week 4 - Unconstrained Minimization – Thrust Region Methods (Mort)

Theory: Thrust Region, Dog-leg method

Literature:

Nocedal and Wright: Numerical Optimization, second edition, Springer, 2006.

- **Chapter 4 (pp. 65-99).**

Exercises: see exercise document

Programming Case:

describe the idea of trust region methods as opposed to linesearch methods

Students:

- Re-implement the program from last week to solve the posing problem using a thrust region dogleg method.
- This will include making an outer loop which establishes the trust region radius for each iteration
- furthermore an inner loop which calculates the new theta using the steepest descent and the gauss newton directions.

Compare your solution to the solutions of previous assignments e.g. the bfgs quasi – newton, the gauss newton, the levenberg marquardt.

Plot your results and discuss them