

On Thursday 14/3, the lectures will be given by Dorte Sølvason. She will briefly review the different methods for solving one nonlinear equation in one unknown. Then she will discuss how to use the generated data from the iterations to estimate the error and hence for defining a stopping criterion.

She will then start on systems of non-linear equations (section 9.6). This includes a derivation of the Jacobian and the resulting computation of the standard Newton step in Eqs.9.6.6 and 9.6.7

With Ole, you will then present results for the problem  $x - \cos(x) = 0$  and you will derive error estimates based on the output. Please compare the estimates to the true errors for the different methods. Then you will receive a real-life system of non-linear equations where you are asked to code the set of equations into the coefficient matrix  $A$  and the right hand side  $b$ .

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