

Computational Physics Laboratory report

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Date

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1 Error analysis

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2 Linear systems

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- 2.1 Forward- and back-substitution
- 2.2 LUP Decomposition

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3 Interpolation

4 Roots of nonlinear equations

5 Numerical integration

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5.1.2 Simpson's rule

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5.2 Free-nodes integration

5.2.1 Nodes and weights of Gauss-Legendre rule

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Remarks

5.2.2 Integrals with Gauss-Legendre rule

5.3 Advanced topics in integration

6 Ordinary differential equations