

Computational Physics
PHYS 410 2014W

Midterm Quiz Topics

- * Binary Representation of Numbers
- * Fixed Point Representation of Fractions
- * Unsigned Integers
- * 32bit/64bit/128 bit IEEE 754 Floating Point Numbers, sign, exponent, mantissa/fraction, exponent bias, max/min, "Machine ϵ "
- * Round-off Errors, Subtraction Errors
- * Richardson Extrapolation of a Numerical Method with $O(h^m)$ error
- * Forward/Backward Differences
- * Symmetric "3-point" Formulas for first and second derivatives
- * Trapezoidal/Simpson's Rule
- * Theory of Gaussian Quadrature (Gauss-Legendre in Particular)
- * Solving ODEs with Euler RK2, RK4 with fixed stepsize