Introduction to Exponential Integrators

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Exponential integrators augment conventional multi-step schemes with exponents of appropriate matrices (typically the Jacobian). They can solve homogneous LTI systems exactly, and hence are A-stable. Therefore, the time step can be larger than that for implicit schemes in stiff problems. Talk will be an overview of the idea, with an empahsis on theory rather than on implementation.

Location and Time

Engineering II 2243 ME classroom @ 5:30pm

Pre-requisites

Numerical simulations: ME 210B / CS 211B / ECE 210B / ME 210B

Reference

1. Hochbruck, Marlis. "A short course on exponential integrators." *Matrix functions and matrix equations.* 2015. 28-49.