Contribution ID: **14** Type: **Contributed talk**

Long-time relative error analysis for linear ordinary differential equations with perturbed initial value

Wednesday, 28 January 2026 11:15 (30 minutes)

We investigate the propagation of initial value perturbations along the solution of a linear ordinary differential equation $y'(t) = Ay(t)$. This propagation is analyzed using the relative error rather than the absolute error. Our focus is on the long-term behavior of this relative error, which differs significantly from that of the absolute error. Understanding the long-term behavior provides insights into the growth of the relative error over all times, not just at large times.

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Session Classification: Session 5