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Registration Seminar

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Seminar Title	: Numerical framework for handling differential equations involving arbitrary order derivatives
Speaker	: Shubham Yadav ( Rollno : 523ma1003)
Supervisor	: Jugal Mohapatra
Venue	: MN-336, Seminar Room, MA dept
Date and Time	: 29 Apr 2025 (04.00 PM)
Abstract	: This study investigates differential equations characterized by multiple fractional derivatives defined in the Caputo sense. To address this problem, we employ a finite difference method, approximating the fractional derivatives using the L1 and L2 schemes on a uniform mesh. A rigorous error analysis is conducted to derive theoretical estimates of the numerical scheme's accuracy. Numerical computations are performed to evaluate the scheme's performance and precision, revealing that the rate of convergence achieves a linear order, consistent with the established theoretical estimates. To enhance the accuracy of the scheme, we implement Richardson extrapolation, demonstrating an effective strategy for improving the method's accuracy.