

**Department of Mathematics and Statistics Colloquium**

## **Discretized Picard's Method**

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**Abstract:** Using the Modified Picard Method of Parker and Sochacki, we will show a hybrid scheme using the analytical Picard method with approximations to the differential operators. This new method, called Discretized Picard's Method, uses approximations in the space dimensions to compute derivatives but utilizes a continuous approximation in the time dimension. Using this new method, we illustrate its applicability to linear and non-linear PDEs using several finite difference operators. We will also show how to derive the stability condition for several examples and show the stability region is increasing up to the CFL condition. Finally, we demonstrate results in one and two dimensions for this method.

**Monday, November 16 at 3:45 in Room 103,  
tea at 3:30**