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Chloe L Ondracek* (chloeondracek@rocketmail.com) and **Narayan Thapa** (narayan.thapa@minotstateu.edu). *On the Numerical Solution of the Sine-Gordan Equation using Method of Lines.*

In this work we study the numerical approximation to the Sine-Gordan equation using the method of lines. The method involves a discrete space domain and continuous time domain. The finite difference approximations to the space derivatives are used and compared. A system of second order ordinary differential equations is developed and then converted to systems of first order equations. MATLAB codes will be developed and implemented. (Received September 11, 2014)