

1086-49-411

Narayan Thapa* (narayan.thapa@minotstateu.edu), 500 University Avenue West, Minot, ND 58707. *Regularization for Second Order Hyperbolic Partial Differential Equation with Neumann Boundary Condition.*

Regularization is a fundamental technique in the processing of measurement data. Thus it provides an opportunity to investigate key properties, the continuity and the differentiability, of solution with respect to parameters. In this paper, we study regularized approach to a nonlinear hyperbolic partial differential equation with Neumann boundary condition. Weakly Gâteaux differentiability of solution maps are shown on the admissible set of parameters. Gâteaux differentiability of objective map and convergence of regularized solution to the non regularized solution are established. (Received August 30, 2012)