



Goursat Partial Differential Equation

By Ros Fadilah Deraman

LAP Lambert Academic Publishing Nov 2015, 2015. Taschenbuch. Book Condition: Neu. 220x150x7 mm. This item is printed on demand - Print on Demand Neuware - The Goursat partial differential equation is a hyperbolic partial differential equation which arises in science and engineering fields. Many approaches have been suggested to approximate the solutions of the Goursat partial differential equations such as the finite difference method, Runge-Kutta method, differential transform method, variational iteration method and homotopy analysis method. These methods focus on series expansion and numerical differentiation approaches including the forward and central differences in deriving the schemes. In this book, we developed new schemes to solve a class of Goursat partial differential equations that applies the Newton-Cotes formula for approximating the double integrals terms. The Newton-Cotes numerical integration involves Newton-Cotes order one, Newton-Cotes order two, Newton-Cotes order three and Newton-Cotes order four. The linear and nonlinear homogeneous and inhomogeneous Goursat problems are examined. The new schemes gave quantitatively reliable results for the problems considered. The numerical analysis test has been performed to ensure that the new schemes are accurate, consistent, stable and converge in solving these problems. 116 pp. Englisch.



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