

On First-Order Nonlinear Partial Differential Equations

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Abstract

In this study, we discuss some theory of first-order partial differential equations (PDEs). Our work is initiated by a classification of the first-order PDEs. Then, the method of characteristics for linear, semi-linear, quasi-linear and nonlinear will be discussed. We will mostly be concerned with first-order nonlinear partial differential equations. Finally, we will conclude our study by a brief discussion on systems of first-order equations and the change of variables method.