

On Some Classes of Partial Differential Equations Possessing Infinite Series of Symmetries and Conservation Laws

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A method of generating infinite series of symmetries and conservation laws for systems of partial differential equations possessing recursion operator is considered. This method is applicable to equations that are contact equivalent to linear equations or with covering linear equations. It is shown, how “linear” symmetries of linearized equations give rise to recursion operators for nonlinear equations. Computational procedures are applied to the minimal surface equation and the Burgers equation.

Keywords: *nonlinear differential equation, local infinitesimal symmetry, conservation law, contact transformation, recursion operator, covering.*

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