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Symmetry Reduction Operators for Monge-Ampère Equations

In this talk, reduction operators related to two-dimensional Monge-Ampère equations are discussed. A degenerated case that occurs while applying the nonclassical method (due to Bluman and Cole) to these types of nonlinear partial differential equations is studied. It is shown that specific Monge-Ampère equations may be reduced to systems of first-order partial differential equations, and, additionally, their solutions are related to Monge and Bateman nonlinear partial differential equations. The connection of these results with the direct method (by Clarkson and Kruskal) is also presented.