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*A group foliation method for finding exact solutions to nonlnear PDEs*

In this talk I will outline a novel symmetry-group method which has been used successfully in recent work to find exact solutions to multi-dimensional wave equations and heat equations with power nonlinearities. The method is based on the geometrical idea of group foliation in which the solution jet space of a given nonlinear PDE is reduced to a quotient space of orbits under the action of a one-dimensional group of symmetries admitted by the PDE.Certain algebraic homogeneity features of the group-invariant equations describing the orbits are used to seek explicit solutions by a relatively simple separation ansatz.