



# EXACT SOLUTION OF PDE'S USING LIE SYMMETRY METHOD

2PM TUESDAY

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We discuss the method of obtaining exact solutions of partial differential equations using Lie symmetry analysis. The one parameter Lie group generator is extended or prolonged to match the order of highest derivative in the pde. Using Lie symmetry criterion, an often over determined system of linear partial differential equations, known as determining equations is obtained. These are solved to obtain infinitesimal generators that in turn yield similarity transformations reducing the number of independent variables in the pde. The procedure is demonstrated by solving the one dimensional heat equation using this approach.

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