

## **LIE SYMMETRY ANALYSIS OF DIFFERENTIAL EQUATIONS**

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### **Abstract**

The group-theoretical analysis of differential equations was initiated by the great Norwegian mathematician Marius Sophus Lie (1842-1899). Lie's discoveries began in 1874, when he extended Galois' treatment of algebraic equations to the study of differential equations. Lie's method systematically unifies and extends well-known ad hoc techniques to construct exact solutions for differential equations, especially for nonlinear differential equations. In this talk we present a brief on Lie symmetry analysis and its applications to differential equations.

**Keywords:** Differential equations, symmetries, invariant solutions, conservation laws