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Oswaldo González-Gaxiola* (ogonzalez@correo.cua.uam.mx), Artificios 40, 01120 Mexico, DF, Mexico. *On the Time-Dependent Solutions of the Schrödinger Equation Through Lie Algebras.*

The application of the Lie algebra methods to the solution of the differential equations has been well established by Picard and Vessiot [1] and Kolchin [2], among others, although S. Lie was one who pointed out for the first time that Galois theory on algebraic equations could be applied to differential equations [3]. In this report, we show that the Schrödinger equation for some time-dependent potential is one of the few systems that leads to a solvable Lie algebra. Moreover, we will consider a more general case where our time-dependent potential is only a particular case [4]. We also want to apply the above algebraic techniques to mathematical finance models [5]. (Received April 26, 2013)