The Lewis-Riesenfeld invariant theory for continuous spectra

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Abstract: Since its discovery in 1969 by Lewis and Riesenfeld, the application of the invariant theory, which is one of the most powerful methods providing exact solutions for the time-dependent Schrödinger equation, has remained confined to systems with discrete spectra, apart from a few examples in the literature where serious problems emerges!

In this seminar, after discussing these problems, we will propose a new approach to the invariant theory which will be subsequently generalized to the case of continuous spectra. Illustrative examples are given at the end of the seminar.