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# RESURGENCE AND SOME OF ITS APPLICATIONS IN PHYSICS

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## Abstract

Recently, an important progress has been made in studying the question of the relation between the perturbative and non-perturbative contributions in quantum theories mainly due to resurgence theory. For instance, rather than the usual perturbative expansion for an energy eigenvalue resurgence analysis connects perturbative contributions with non-perturbative effects through "resurgent trans-series" such that the imaginary terms with ambiguities coming from the Borel summation cancels systematically each other to all orders. In this talk, I will survey the resurgence program in quantum mechanics, and I will report on a joint work with Kemal Tezgin, which discusses polynomial anharmonic oscillators in this context. If time permits, I will briefly discuss resurgent analysis of exact quantities in supersymmetric gauge theories.

**Date :** Tuesday, June 7, 2016

**Time:** 13:30 - 15.30

**Place:** IMBM Seminar Room, Boğaziçi University South Campus