

Exact WKB Analysis and TBA Equations for the Stark Effect

Thursday, 30 November 2023 16:45 (15 minutes)

In this talk, I will discuss the application of the exact WKB analysis to a couple of one-dimensional Schrödinger-type equations reduced from the Stark effect of hydrogen. By introducing Langer's modification, we prove the exactness of the Bohr-Sommerfeld quantization conditions for the Borel-resummed quantum WKB periods at the weak electric field intensities and also find these quantization conditions get modified with an additional suppressed contribution when the electric field becomes large. We also present TBA equations governing the quantum periods in the absence of Langer's modification. I will mention its possible application to supersymmetric gauge theory and quasi-normal modes around black holes in the end.

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