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DK Seminar

Mar 29, 2017, 14:15 - 15:45
University of Vienna,
Oskar-Morgenstern-Platz 1, HS 2

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Efficient approximation of the Schrödinger equation at turning points

We are concerned with the highly oscillatory regime of a stationary Schrödinger equation including so-called turning points, i.e. zeros of the coefficient function. Approximation of the coefficient function leads to a related equation to which solutions are known. The error we encounter compared to the original equation in terms of the step-size h and the rescaled Planck constant ε is investigated. This does not constitute an ε -uniform scheme. To get uniformity we try to couple it with an ε -asymptotic scheme at an ε -dependent switching point.