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## DK Seminar

Nov 30, 2016, 14:15 - 15:00  
Vienna University of Technology,  
Freihaus, green area, 4th floor

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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  $\varepsilon$  is investigated. This does not constitute an  $\varepsilon$ -uniform scheme. To get uniformity we try to couple it with an  $\varepsilon$ -asymptotic scheme at an  $\varepsilon$ -dependent switching point.