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Fast and oblivious quadrature for the Schrödinger equation

Tuesday, 18 June 2019 12:00 (45 minutes)

Fast and oblivious quadrature was introduced by López-Fernández, Lubich and Schädle for convolutions with a kernel whose Laplace transform is a sectorial operator. The algorithm can compute N steps of a convolution quadrature approximation of the convolution while using only $O(\log N)$ active memory and with $O(N \log N)$ computational complexity.

In this talk we describe how oblivious quadrature can be extended to some non-sectorial operators. In particular we present an application to a non-linear Schrödinger equation describing the suppression of quantum beating.

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