

Trif, Damian**Matlab package for the Schrödinger equation.** (English) Zbl 1156.81380

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Summary: The paper presents a Matlab package for the linear time-(in)dependent Schrödinger equation, based on the Hermite spectral method. The matrix form of the discretized problem is suitable for the linear algebra capabilities of Matlab. The high accuracy and efficiency of the algorithm is proved by many examples taken from the literature.

MSC:

- 81Q05** Closed and approximate solutions to the Schrödinger, Dirac, Klein-Gordon and other equations of quantum mechanics
- 65L15** Numerical solution of eigenvalue problems involving ordinary differential equations
- 65M70** Spectral, collocation and related methods for initial value and initial-boundary value problems involving PDEs
- 35L40** First-order hyperbolic systems

Keywords:

Schrödinger equation; Hermite spectral method; Matlab

Software:

SLEDGE; Matlab; MATSLISE; HermiteEig

Full Text: [DOI](#)**References:**

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