

Analytical approximations to discrete soliton profiles in Discrete Nonlinear Schrödinger models.

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In this talk, we show two approximate methods for calculating, analytically, the profile of discrete solitons in the Discrete Nonlinear Schrödinger (DNLS) equation.

One method [1] consists in a variational calculation of the amplitude of the soliton, supposing that it has a peaked spatial profile. To this end, we use a modification of the methods presented in [2].

The other method [3] is based in the assumption that discrete solitons in the DNLS can be homoclinic orbits in a two-dimensional map [4]. Our contribution to this method consists in approximating the homoclinic orbits by a polynomial form.

References

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