

# Standing waves for nonlinear Schrödinger equations and Kato-Rellich potential

Aleksander wizewski, Wojciech Kryszewski and Piotr Kokocki

We shall look for standing waves in the nonlinear Schrödinger equation

$$i\psi_t + \Delta\psi = V(x)\psi + g(x, |\psi|)\frac{\psi}{|\psi|}, \quad x \in \mathbb{R}^N, \quad t > 0,$$

with the Kato-Rellich type potential  $V$  and the nonlinearity  $g$ . Assuming that  $g$  satisfies either the Landesmann-Lazer conditions or the so-called sign conditions, we prove the existence and bifurcation from infinity results. Different types of estimates for  $g$  shall be considered. The results are obtained via the Conley index in the version of Rybakowski [6] and extend those known from the literature such as [4], [3] and [5].

## References

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**First Author:** Aleksander, wizewski

**Affiliation:** Faculty of Mathematics and Computer Science/Nicolaus Copernicus University  
87-100 Toruń, Poland

**e-mail:** aleks@mat.umk.pl

**Second Author:** Piotr, Kokocki

**Affiliation:** Faculty of Mathematics and Computer Science/Nicolaus Copernicus University  
87-100 Toruń, Poland

**e-mail:** pkokocki@mat.umk.pl

**Third Author:** Wojciech, Kryszewski

**Affiliation:** Institute of Mathematics/Lodz University of Technology  
93-590 Łódź, Poland

**e-mail:** wojciech.kryszewski@p.lodz.pl