

# Travelling waves of the NLS equation breaking out from a potential well

**Iván Naumkin**

Departamento de Física Matemática  
Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas  
Universidad Nacional Autónoma de México  
C.P. 04510, México D.F.

## **Abstract**

We study the NLS equation in a presence of an external field. We investigate the soliton motions that correspond to a free soliton escaping the well created by the potential. We exhibit the dynamical system driving the exiting trajectory and construct the associated nonlinear dynamics for untrapped motions.