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Two-solitons with logarithmic separation for 1D NLS with repulsive delta potential

For the nonlinear Schrodinger equation in one dimension, with a repulsive delta potential that is not too strong, we show the existence of two-soliton solutions with logarithmic (in time) separation. The construction is based on that of Nguyen for the case without potential, modified to account for the additional interaction between the potential and the solitons. This interaction manifests through a perturbed translational eigenfunction, whose detailed properties play a key role. This is joint work with Takahisa Inui.