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Santosh Bhattarai* (bhattarais@trocaire.edu), Trocaire College, 360 Choate Ave, Buffalo, NY 14220. *Standing waves for pseudo-relativistic nonlinear Schrodinger equations*. Preliminary report.

We study standing waves for pseudo-relativistic Schrödinger equations involving the operator of the form

$$\sqrt{-c^2\Delta + m^2c^4} - mc^2.$$

Such equations are relativistic version of nonlinear Schrödinger equations. The operator above corresponds to the quantization of the kinetic energy for a relativistic particle and is also called the relativistic free-particle Hamiltonian operator. We use a local interpretation of the relativistic operator by considering the Dirichlet-to-Neumann type operator for the upper half-plane and study solutions for the equivalent local Neumann problem in one more space dimension via variational methods. (Received July 18, 2017)