

1064-35-27

**Jaime Angulo Pava\*** ([angulo@ime.usp.br](mailto:angulo@ime.usp.br)), Rua do Matao 1010, Cidade Universitaria, Department of Mathematics, IME-USP, Sao paulo, 05508-090, Brazil, and **Gustavo Ponce** ([ponce@math.ucsb.edu](mailto:ponce@math.ucsb.edu)), Department of Mathematics, University of California, Santa Barbara, Santa Barbara, CA 93106. *The Cubic Schrodinger Equation with a Periodic Delta Interaction: Existence and Stability of Periodic Standing Wave*. Preliminary report.

We study the existence and stability of periodic standing waves for the cubic nonlinear Schrödinger equation with a point defect determined by the periodic Dirac distribution at the origin. We obtain that in the case of a attractive defect the periodic-peak traveling waves with a profile of dnoidal type are stable in  $H_{per}^1$  with respect to perturbations which have the same period as the wave itself. In the case of a repulsive defect, the dnoidal-peak waves are stable in the subspace of even functions of  $H_{per}^1$  and unstable in  $H_{per}^1$ . Also, we obtain that in the case of a repulsive defect the periodic-peak traveling waves with a profile of cnoidal type are unstable in  $H_{per}^1$ . Global well-posedness is obtained in  $H_{per}^1$ . This is a joint work with Gustavo Ponce - UCSB, USA.

(Received August 09, 2010)