1125-VB-1753 **Patrick Cummings*** (`patrickc@bu.edu`) and **C. E. Wayne**. *Modified Energy Functionals and the NLS Approximation.*

We consider a model equation that captures important properties of the water wave equation. We discuss a new proof of the fact that wave packet solutions of this equation are approximated by the nonlinear Schrödinger equation. This proof both simplifies and strengthens previous results of Wayne and Schneider so that the approximation holds for the full interval of existence of the approximate NLS solution rather than just a subinterval. Furthermore, the proof avoids the problems associated with inverting the normal form transform by working with a modified energy functional motivated by Craig and Hunter et. al. (Received September 19, 2016)