1026-35-200   **Richard O. Moore*** (`rmoore@njit.edu`), Mathematical Sciences, NJIT, 323 Martin Luther King, Jr. Blvd., Newark, NJ 07102. *Travelling Waves in the Thermally Loaded Parametrically Forced Nonlinear Schrödinger Equation.*

We show that the parametrically driven nonlinear Schrödinger equation coupled to a heat equation, given by

$$iu_t + \frac{1}{2}u_{xx} + |u|^2 u + (i - a(\theta))u + \gamma u^* = 0, \tag{1}$$

$$\theta_t - \kappa\theta_{xx} + h\theta = |u|^2, \tag{2}$$

supports a novel family of multihumped travelling wave solutions. We study the dynamics of these localized solutions using collective coordinates that can be proven using renormalization group techniques to capture the true dynamics of the PDE. We consider in particular the two widely separated limits of thin pulses with broad thermal profiles, and broad pulses with thin thermal profiles. (Received February 27, 2007)