1036-78-153 **Richard O. Moore*** (rmoore@njit.edu), Department of Mathematical Sciences, New Jersey Institute of Technology, 323 Martin Luther King, Jr. Blvd., Newark, NJ 07102. *Nonlocal stabilization of localized solutions to damped-dispersive equations.* Preliminary report.

A variety of physical phenomena give rise to nonlocal coupling of optical fields, such as when light propagates through media subject to heating or photorefractive damage. The nonlocal terms in the resulting evolution equations can stabilize localized solutions, in particular solitons and traveling waves, that are otherwise unstable and therefore physically irrelevant. We describe this stabilization geometrically and through a collective coordinate reduction in a system subject to homoclinic snaking that is derived from an optical cavity containing a thermally driven parametric gain medium. (Received January 21, 2008)