

1145-35-1707

**Oreoluwa Adekoya\*** (oadekoya@ou.edu) and **John P Albert**. *Stable travelling-wave solutions of the periodic dispersion-managed NLS equation.*

The dispersion-managed nonlinear Schrodinger equation is an equation that models optical pulses in a “dispersion-managed” fiber. This fiber is made of lengths of glass whose sections of large positive dispersion alternate with sections of large negative dispersion. The method of alternating dispersion eliminates unwanted spreading of signals and gives rise to a well-localized stable pulse that changes periodically along the fiber. It is common that in such fibers, the average dispersion is nearly zero, which is reflected in the fact that the energy functional associated with the equation lacks coercivity. Nevertheless, recent studies have shown that minimizing sequences for the energy functional converge to stable solitary-wave solutions.

We will consider the periodic dispersion-managed NLS equation, which models periodic waves in a dispersion-managed fiber. The minimization problem for the energy functional is more subtle in the periodic case. We will study the existence of minimizers and their correspondence to stable travelling-wave solutions. (Received September 25, 2018)