1089-35-319   **Peter D. Miller*** (`millerpd@umich.edu`). *On the stability analysis of periodic sine-Gordon traveling waves.*

We study the spectral stability properties of periodic traveling waves in the sine-Gordon equation, including waves of both subluminal and superluminal propagation velocities as well as waves of both librational and rotational types. We prove that only subluminal rotational waves are spectrally stable and establish exponential instability in the other three cases. Our proof corrects a frequently cited one given by Scott. This is joint work with C. K. R. T. Jones, R. Marangell, and R. Plaza. (Received February 18, 2013)