

Meeting: 1003, Atlanta, Georgia, MAA CP X1, MAA General Contributed Paper Session, I

1003-X1-1629 **Krista O'Neill*** (krista@math.uconn.edu), University of Connecticut, Department of Mathematics, U-3009, 196 Auditorium Road, Storrs, CT 06269. *High Frequency Response to Low Frequency Forcing in a Nonlinear Mechanical Model.*

Given a model of the vertical motion of a suspension bridge, we investigate numerically the response of this model to low frequency periodic forcing for both the piecewise-linear restoring term and a smoothed replacement. Results gained showed that as soon as the motions extend into the nonlinear range, not only do multiple solutions occur, but many have a substantial high frequency component. Further, this was seen even when smoothing the nonlinearity. (Received October 05, 2004)