1074-39-135 **Lingju Kong*** (Lingju-Kong@utc.edu), Department of Mathematics, University of Tennessee at Chattanooga, Chattanooga, TN 37403, and **John R. Graef** and **Qingkai Kong**. *Existence of multiple solutions for a generalized discrete beam equation.*

We study the existence of multiple solutions for the generalized discrete beam equation

$$\Delta^4 u(t-2) - \alpha\Delta^2 u(t-1) + \beta u(t) = \lambda f(t, u(t)), \quad t \in [1, T]_{\mathbb{Z}},$$

together with the boundary condition

$$u(0) = \Delta u(-1) = \Delta^2 u(T) = 0, \quad \Delta^3 u(T-1) - \alpha\Delta u(T) = \mu g(u(T-1)),$$

where $T \geq 2$ is an integer, $[1, T]_{\mathbb{Z}} = \{1, 2, \ldots, T\}$, $\alpha, \beta, \lambda, \mu \in \mathbb{R}$ are parameters, $f \in C([1, T]_{\mathbb{Z}} \times \mathbb{R}, \mathbb{R})$, and $g \in C(\mathbb{R}, \mathbb{R})$. Various special cases of the above problem are also discussed. Examples are included to illustrate the results. (Received August 22, 2011)