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Charles Lamb* (clamb@iup.edu) and **Erik S. Van Vleck**. *Bifurcation Analysis of Systems of Neutral Equations of Mixed Type*. Preliminary report.

We consider a system of neutral equations of mixed type generalizing a parallel nerve fiber model previously considered. A bifurcation analysis of the system is presented. Analytically, the bifurcation equation is obtained via the Lyapunov-Schmidt method. The kernel of the associated linear operator is shown to be one-dimensional, and a saddle-node bifurcation occurs as the equations couple. Numerically, we employ a pseudo-spectral approach within a path following framework to continue solutions. (Received September 16, 2014)