

1014-34-1617

Marion Weedermann* (mweederm@dom.edu), Dominican University, Dept. of Mathematics and Computer Science, 7900 W Division Street, River Forest, IL 60305. *Properties of periodic solutions generated by Hopf bifurcation of a neutral delay-differential equation.*

In this presentation, Hopf bifurcations in neutral delay-differential equations with neutral term $\dot{x}(t) - a\dot{x}(t - \tau)$ are analyzed for $|a| < 1$. Using normal form theory we determined the stability coefficient of the periodic orbit. Further, we describe the behavior of the solutions as the parameter $|a|$ approaches 1, which acts as a natural limiting value as for $|a| \geq 1$ our considerations are no longer valid. (Received September 28, 2005)