Properties of Pancentral and Pancyclic Graphs

Eric Choi *, Georgia Gwinnett College
Anthony Delgado, Ph.D. candidate at Columbia University
Marty Lewinter, Purchase College

The *center* of a graph G, denoted $C(G)$, is the set of vertices of minimum eccentricity. A graph G is called *pancentral* if given any vertex $v \in V(G)$, there exists a spanning tree T of G such that $v \in C(T)$. A pancentral graph G is called *pan-unicentral* if given any vertex, $v \in V(G)$, there exists a spanning tree, T, of G such that the center, $C(T) = \{v\}$. A pancentral graph is called *pan-bicentral* if given any pair of adjacent vertices, $u, v \in V(G)$, there exists a spanning tree T of G such that $C(T) = \{u,v\}$. A graph, G, on n vertices is *pancyclic* if it contains subgraphs, $C_3, C_4, \ldots C_n$. Various properties are presented.