TWINS AND SEMITWINS IN DIGRAPHS

Ofelia Cepeda-Camargo and Hortensia Galeana-Sánchez

National Autonomous University of Mexico (UNAM)

e-mail: ofelia@ciencias.unam.mx, hgaleana@matem.unam.mx

Let D be a digraph, $V(D)$ and $A(D)$ will denote the sets of vertices and arcs of D, respectively.
Given $u, v \in V(D)$ we say that they are semitwins if $N^-(u) = N^-(v)$ or $N^+(u) = N^+(v)$ where $N^-(v) = \{x \in V(D) : (x, v) \in A(D)\}$ and $N^+(v) = \{x \in V(D) : (v, x) \in A(D)\}$. Also, we say that u and v are twins if $N^-(u) = N^-(v)$ and $N^+(u) = N^+(v)$. A digraph D is a semitwin digraph if every pair of adjacent vertices in D are semitwins. In this talk we prove that if D is a semitwin strong digraph then D is vertex-pancyclic. Also, we characterized the semitwin strong digraphs and the semitwin connected digraphs which are not strong connected.