

VCU Discrete Mathematics Seminar

Recent Results on Cycle Bases

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12:30–1:20

4119 Harris Hall

Abstract: The cycle space W for a directed graph D is the span of the set of vectors, each indexed by the arcs of D and with entries in $-1,0,1$, given by circuits (simple cycles) of D . A cycle basis for D is a basis of W . In some applications, one wants a cycle basis that is best according to some criterion. We review some old and newer facts about cycle bases. We then specialize to digraphs that have cycle bases that satisfy a property called mixed dominating. These arise in certain ring theory settings. Recent results of Gitler et. al. and the speaker on digraphs with this property are presented.

