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**John Asplund\***, Dalton State College, 650 College Drive, Sequoya 153, Dalton, GA 30720.  *$\lambda$ -fold 5-cycle systems and the FUTURE!* Preliminary report.

A  $k$ -cycle system of a multigraph  $G$  is an ordered pair  $(V, C)$  where  $V$  is the vertex set of  $G$  and  $C$  is a set of  $k$ -cycles, the edges of which partition the edges of  $G$ . A  $k$ -cycle system of  $\lambda K_v$  (a  $K_v$  with each edge repeated  $\lambda$  times) is known as a  $\lambda$ -fold  $k$ -cycle system. Various methods have been used throughout recent decades in the pursuit of showing which necessary conditions for the existence of a  $k$ -cycle system of  $\lambda K_v$  are sufficient. In this talk we will look at the methods that went into finding 5-cycle systems of  $(\lambda + \mu)K_{v+u} - \lambda K_v$  (a  $(\lambda + \mu)K_{v+u}$  with the edges of a subgraph of  $\lambda K_v$  removed) and what will happen next. (Received September 11, 2015)