

Cycle system with two associate classes  
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A  $G$ -decomposition of  $H$  is a partition of the edges of  $H$  into sets, each of which induces a copy of the graph  $G$ . A decomposition is said to have two associate classes if  $H$  is a graph with partition  $P$  of its vertex set in which each pair of vertices is joined by  $\lambda_1$  edges if they occur in the same part of  $P$ , and by  $\lambda_2$  edges if they occur in different parts of  $P$ . In this talk, the focus will be on the case where  $G$  is a cycle, both constructing such decompositions and investigating further requirements such as making the decomposition resolvable (factorizations) or gregarious (fairly distributed in some sense). The methods employed are a nice mix of graph theoretic and design theoretic techniques.