Mutually orthogonal cycle systems

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An ℓ-cycle system of order $n$ is a set of ℓ-cycles whose edges partition the
eedge set of $K_n$. We say that two cycle systems, say $C$ and $C'$, are orthogonal
if any cycle of $C$ and any cycle of $C'$ share at most one edge. Orthogonal
cycle systems arise naturally from simple Heffter arrays and biembeddings of
cycle decompositions.

A collection of cycle systems is mutually orthogonal if any two of the
systems are orthogonal. In this talk, we give bounds on the number of
mutually orthogonal ℓ-cycle systems of order $n$, and provide constructions
for sets of mutually orthogonal cyclic cycle systems.