DOUG STINSON, University of Waterloo
On equitably ordered splitting BIBDs

A splitting BIBD is a combinatorial design that can be used to construct splitting authentication codes with good properties. If a splitting BIBD can be equitably ordered, then the associated authentication code also provides perfect secrecy.

For various pairs $(k;c)$, we determine necessary and almost sufficient conditions for the existence of $(v;k\times c;1)$-splitting BIBDs that can be equitably ordered. Our results cover the pairs $(k;c)=(3;2)$; $(4;2)$; $(3;3)$ and $(3;4)$, as well as all cases with $k=2$.

This talk is based on joint work with Maura Paterson.