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Joseph W. Iverson*, Department of Mathematics, University of Maryland, College Park, MD 20742, and **John Jasper** and **Dustin G. Mixon**. *Incoherent frames from finite group actions*.

In applications such as compressed sensing and quantum information theory, it is critically important to find examples of frames whose vectors are spread wide apart, in the sense that they span lines with large interior angles between them. Put differently, we want to find unit norm frames with minimal coherence. This is an old problem, going back at least to the work of van Lint and Seidel in the 1960s, and it remains an active and challenging area of research today. In this talk, we will present a new recipe for converting transitive actions of finite groups into unit norm tight frames, many of which have optimal coherence. The main idea is to use an association scheme as a kind of converter to pass from the discrete world of permutation groups into the continuous setting of finite frames. This process is easy to implement in a computer program like GAP. We will present examples of optimally incoherent frames produced in this way, including the first infinite family of equiangular tight frames with Heisenberg symmetry. (These are not SIC-POVMs, but they appear to be related.) (Received February 12, 2018)