1030-05-304   **James A Davis*** (`jdavis@richmond.edu`), Department of Mathematics and Computer Scienc, University of Richmond, Richmond, VA 23173, and **Pohl Michael**, Department of Mathematics and Computer Scienc, University of RIchmond, Richmond, VA 23173. *Crossover of aperiodic autocorrelation functions for quaternary sequences.*

Motivated by the need to better understand quaternary aperiodic autocorrelation functions in order to construct new Golay sequences, we modify Whitehead's approach to find an upper bound for the number of distinct quaternary aperiodic autocorrelation functions at length n. We construct a family of quaternary sequences that demonstrate that the upper bound is not sharp. Our construction does not have a known analogy for binary sequences, indicating that quaternary sequences will exhibit behavior distinct from the binary case. (Received August 06, 2007)