Abstract

Permutation Groups, Error-Correcting Codes and Uncoverings

Robert F. Bailey

School of Mathematical Sciences
Queen Mary, University of London
Mile End Road, London E1 4NS
United Kingdom
r.f.bailey@qmul.ac.uk

We replace the traditional setting of error-correcting codes (namely vector spaces over finite fields) with that of permutation groups, using permutations written in list form as the codewords. We will describe some groups which are suitable for this purpose, and introduce a decoding algorithm which in turn uses what we call an *uncovering*. These are objects which are closely related to covering designs.