Abstract

On point-imprimitive, block-transitive designs

Cheryl E Praeger

School of Mathematics and Statistics University of Western Australia Crawley WA 6009, AUSTRALIA

These elusive structures have fascinated me for more than 15 years, ever since I heard of the beautiful result of Anne Delandtsheer and Jean Doyen that, for such designs, the number of points is bounded by a certain function of the block size. I will trace some of the results known to me in this area, through to the lovely new results of Regueiro on flag-transitive symmetric designs. This will include recent joint work with Shenglin Zhou in which we attempt to understand and extend Regueiro's results.