
CHERYL PRAEGER, The University of Western Australia

Local transitivity properties of graphs and pairwise transitive designs

One of the earliest triumphs in applying the finite simple group classification in algebraic graph theory was the characterisation of finite distance transitive graphs. Recent work by Devillers, Giudici, Li and myself focuses on a generalisation of this class of graphs: locally s -distance transitive graphs where ordered vertex-pairs, with given first vertex and at a given distance at most s , are equivalent under automorphisms. One basic type of example is closely linked with the existence of very symmetrical point-line incidence structures which we call pairwise transitive designs. I will trace these developments and their links.