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Optimality and constructions of locating arrays. (English) Zbl 1418.05040

Summary: Locating arrays are of interest in generating software test suites to cover all \(t\)-way component interactions and locate interaction faults in component-based systems. However, constructions of optimal locating arrays have not been studied systematically. Indeed, no useful lower bound has previously been determined, and only some sporadic examples of optimal locating arrays have been found. When a single fault is to be located, this article develops both a lower bound on the size of locating arrays and some methods of constructing optimal locating arrays. Some infinite series of optimal locating arrays are then obtained.

MSC: 05B15 Orthogonal arrays, Latin squares, Room squares

Keywords: covering array; interaction faults; locating array

Full Text: DOI

References:

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