ON EXTENSIONS OF PARTIAL n-QUASIGROUPS OF ORDER 4

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We prove that every collection of pairwise compatible (nowhere coinciding) n-ary quasigroups of order 4 can be extended to an $(n+1)$-ary quasigroup. In other words, every Latin $4 \times \cdots \times 4 \times l$-parallelepiped, where $l = 1, 2, 3$, can be extended to a Latin hypercube.

Key words and phrases: n-ary quasigroup, reducible n-quasigroup, semi-linear n-quasigroup of order 4, Latin n-cube, MDS-code.

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