

Exhaustive Generation of Orthomodular Lattices with Exactly One Non-Quantum State

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Abstract

We give an algorithm for generating orthomodular lattices (OMLs) with exactly one state that do not admit particular properties of the Hilbert space. We apply MMP algorithms to obtain smallest OMLs with 35 atoms and 35 blocks (35-35) and all other ones up to 38-38. We find out that all but one of them admit exactly one state and discover several other properties of theirs. Previously known such OMLs have 44 atoms and 44 blocks or more. We present some of them in our notation.

Key words: Reverse Kochen-Specker theorem, Hilbert space, orthomodular lattices, MMP diagrams, Greechie diagrams, strong set of states

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