Classes of effect algebras

Josef Tkadlec*

Ovchinnikov [2] introduced weakly orthocomplete orthomodular posets (he called them alternative) as a common generalization of orthocomplete orthomodular posets and orthomodular lattices. He showed that they are special cases of disjunctive orthomodular posets (and a generalization of implicative orthomodular posets). Weak orthocompleteness is useful in the study of orthoatomisticity and disjunctivity might be used to characterize atomisticity [2, 6].

Tkadlec [3] introduced the class of orthomodular posets with the maximality property as another common generalization of orthocomplete orthomodular posets and orthomodular lattices. He showed that this class is also a special class of disjunctive orthomodular posets and various consequences of this property in effect algebras—especially in the study of compatibility and Jauch–Piron states [3, 4, 5, 7].

We show that these two notions are incomparable and study their generalizations given by De Simone and Navara [1] and Tkadlec [7].

Acknowledgments. The work was supported by the grant of the Grant Agency of the Czech republic no. 201/07/1051 and by the research plan of the Ministry of Education of the Czech Republic no. 6840770010.

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*Department of Mathematics, Faculty of Electrical Engineering, Czech Technical University in Prague, 166 27 Praha, Czech Republic; e-mail: tkadlec@fel.cvut.cz.