GEOMETRY OF ŁUKASIEWICZ INFINITE-VALUED LOGIC

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Introduced by C.C. Chang in 1958, MV-algebras are the algebraic counterpart of Łukasiewicz infinite-valued logic (see [3], [1] and [2]).

In this talk we will first describe in some detail the connections among finitely generated theories of $Ł_\infty$, finitely presented MV-algebras and the geometry of rational polyhedra. Then we will see some applications of these connections in the study of various topics related to $Ł_\infty$ and MV-algebras:

- normal forms in $Ł_\infty$,
- amalgamation properties of MV-algebras and interpolation properties of $Ł_\infty$,
- projective MV-algebras.
- unification problems for $Ł_\infty$.
- admissible rules for $Ł_\infty$

References

[1] C.C. Chang, Algebraic analysis of many valued logic, *Transactions of the American Mathematical Society* 88 (1958), 467-490.

[2] R. Cignoli, I. M. L. D'Ottaviano, and D. Mundici, *Algebraic Foundations of Many-Valued Reasoning*, Trends in Logic - Studia Logica Library 7, Kluwer Academic Publishers, 2000.

[3] J. Łukasiewicz and A. Tarski, Untersuchungen über den Aussagenkalkül, *Comptes Rendus des séances de la Société des Sciences et des Lettres de Varsovie* Classe III, 23 (1930), 30-50.