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ABSTRACTS

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Part I

Abstracts for Invited Talks

Algebraic foundation of new discrete mathematical functions

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One of the main research-problems of algebra is characterization of free algebras of a given variety, particularly, characterization of finitely generated free algebras of a given variety. For instance, it is commonly known that the free Boolean algebra on n free generators is isomorphic to the Boolean algebra of Boolean functions of n variables. The free distributive lattice on n free generators is isomorphic to the lattice of monotone Boolean functions of n variables. A problem posed by B.I. Plotkin in 1970s has required finding the varieties of algebras with analogous functional representations of free finitely generated algebras. In this talk we give a solution of this problem. As a consequence we obtain new discrete mathematical functions: De Morgan functions, quasi-De Morgan functions, bi-De Morgan functions, super-Boolean functions, Super-De Morgan