THE GROWTH POINTS OF BOOLEAN VALUED ANALYSIS

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Boolean valued analysis is a powerful method of extending the scope of mathematical theories by means of the special nonstandard models of set theory. This communication will pay attention to the following issues:

1. The Continuum Hypothesis
   1.1. Cantor's formulation
       1.1.1. The beginning of set theory
       1.1.2. The notion of continuum
       1.1.3. The Continuum Problem
   1.2. Gödel's independence result
       1.2.1. The universe of constructible sets
       1.2.2. An inner model of ZFC+CH in ZF
       1.2.3. The Continuum Hypothesis cannot be disproven
   1.3. Cohen's independence result
       1.3.1. The universe of Boolean valued sets
       1.3.2. A Boolean valued inner model of ZFC+¬CH in ZFC
       1.3.3. The Continuum Hypothesis cannot be proven
   1.4. Other independence results

2. Kantorovich spaces
   2.1. Key notions
       2.1.1. The notion of vector lattice
       2.1.2. The notion of Kantorovich space
       2.1.3. The Boolean algebra of band projections
   2.2. Boolean valued interpretation of the reals
       2.2.1. Kantorovich's heuristic transfer principle
       2.2.2. Gordon's theorem
       2.2.3. The birth of Boolean valued analysis

3. The machinery of Boolean valued analysis
   3.1. Ascents and descents
   3.2. The Boolean valued transfer
   3.3. Applications
       3.3.1. Intrinsic characterization of subdifferentials
       3.3.2. General desintegration in Kantorovich space
       3.3.3. The Kaplansky Problem: Homogeneity of a type I AW^*-algebra
       3.3.4. The Wickstead Problem: Order boundedness of band preserving operators
       3.3.5. The Maharam extension of a positive operator
       3.3.6. Classification of injective Banach lattices

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