

Contents

1	Motivation	6
2	Types of uncertainty	7
2.1	Stochastic uncertainty	7
2.2	Quantum uncertainty	7
2.3	Fuzzy uncertainty	7
2.4	Distinguishing different types of uncertainty	7
2.5	Combinations of types of uncertainty	8
3	Quantum logics	8
3.1	Quantum structures	8
3.2	States	9
3.3	Different descriptions of quantum structures	10
3.4	Representation of the state space	11
3.5	The hidden variables conjecture	12
3.6	Center, automorphism group, and their independence on state space	15
3.7	Quantum structures with rich state spaces	16
3.8	Uniqueness problem for bounded observables	16
4	Fuzzy logics	17
4.1	Motivation	17
4.2	Fuzzy logical operations	18
4.3	Tribes	19
4.4	Measures on systems of fuzzy sets	20
4.5	Probability on MV-algebras	21
4.6	Comparison	22
5	Conclusions and perspectives	23