Abstract

In this talk we introduce the fuzzy minimal modal algebra in Hajek's view which is called $K$-modal BL-algebra for abbreviation. The properties of this algebra and some types of its filters are studied. Then we present the logic corresponding to this algebra, i.e. fuzzy minimal modal logic. We introduce some extensions of the $K$-modal BL-logic such as $T$-modal BL-logic and $S4$-modal BL-logic. Properties of these logics are studied. We introduce the algebraic semantics of these logics. The algebraic semantics of $T$-modal BL-logic and $S4$-modal BL-logic are called $T$-modal BL-algebra and $S4$-modal BL-algebra, respectively. Then we show some properties of these algebras and the relationship between them is investigated.