

Meeting: 1004, Bowling Green, Kentucky, SS 8A, Special Session on Topology, Convergence, and Order, in Honor of Darrell Kent

1004-54-222 **Werner Gaehler*** (preuss@math.fu-berlin.de), I. Mathematisches Institut, FU Berlin, Arnimallee 3, 14195 Berlin, Germany. *Various types of logics, related structures and their applications.*

The talk deals with the following points:

1. Monoidal predicate logics

Among others as special cases the intuitionistic logic, the linear logic in sense of Girard, the Łukasiewicz logic and the classical predicate logic appear.

2. The modal predicate logic and generalizations

Here additional to the classical junctors \neg , \wedge , \vee , \rightarrow a unary junctor \mid is given. In some sense \mid is related to the notion of interior operator.

3. Fuzzy logic and applications

Among others fuzzy control, fuzzy numbers, fuzzy analysis, fuzzy calculus and feedforward neural networks will be considered. The fuzzy logic is popular because of their interesting technical applications.

4. Extension structures with respect to a set functor $\varphi : \text{SET} \rightarrow \text{SET}$, also called φ -extension structures.

These notions contain important structural properties of φ -Cauchy-structures and they are basically for a general completion theory. Moreover these notions contain important structural properties of φ -limit structures and they are basically for a theory of compactifications. (Received January 25, 2005)