**On Some Axiomatic Extensions
of the Monoidal T-norm Based
Logic MTL: an Analysis in
the Propositional and in the
First-order Case**

Matteo BIANCHI

Ledizioni

The scientific area this thesis belongs to is many-valued logics: this means logics in which, from the semantical point of view, we have "intermediate" truth-values, between 0 and 1 (which in turns are designated to represent, respectively, the "false" and the "true").

The classical logic (propositional, for simplicity) is based on the fact that every statement is true or false: this is reflected by the excluded middle law, that is a theorem of this logic. However, there are many reasons that suggest to reject this law: for example, intuitionistic logic does not satisfy it, since this logic reflects a "constructive" conception of mathematics (see [Hey71, Tro69]).