

Connections between real algebra and logic

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Abstract

Logicians have introduced a class of structures, called o-minimal structures, whose geometry includes real algebraic and sub-analytic geometry. Real algebraic geometry is based on real algebra and a fundamental object in this context is the real spectrum of a commutative ring (just like algebraic geometry is based on commutative algebra and the fundamental object is the spectrum of a commutative ring). In o-minimal geometry we have the o-minimal spectrum which is used to develop a sheaf cohomology theory generalizing sheaf cohomology in real algebraic geometry (Delfs) and in sub-analytic geometry (Kashiwara-Schapira).