1003-81-101   **Alexander Retakh*** (`retakh@math.mit.edu`), Department of Mathematics, Room 2-155, Massachusetts Institute of Technology, Cambridge, MA 02139. *Lie conformal superalgebras.*

Conformal superalgebras were introduced by V.Kac in order to provide an algebraic formalism for the theory of vertex algebras and, more generally, confromal field theory. In particular, they are closely related (and generalize) the super-conformal algebras in physical literature. From a purely Lie-theoretic point of view, we are dealing with a rich class of infinite-dimensional Lie superalgebras.

I will present the recently obtained classification of Lie conformal superalgebras of finite rank, and discuss their automorphisms and representations. I will also explain what makes a conformal superalgbera "physical", i.e. responsible for physical theories.

Part of this talk is based on joint work with D.Fattori and V.Kac. (Received August 05, 2004)