

## On Degenerations of Lie Superalgebras

Isabel Hernández - CIMAT

### Abstract

In this talk we give necessary conditions for the existence of degenerations between two complex Lie superalgebras of dimension  $(m, n)$ . As an application, we study the variety  $LS(2, 2)$  of complex Lie superalgebras of dimension  $(2, 2)$ . We obtain that  $LS(2, 2)$  is the union of seven irreducible components, three of which are the Zariski closures of rigid Lie superalgebras. As byproduct, we obtain an example of a nilpotent rigid Lie superalgebra, in contrast to the classical case where no example is known.