

Introduction to Supergeometry

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Resumo/Abstract:

Supergeometry a generalization of differential geometry where some coordinate are allowed to anticommute with each other. Most concepts and theorems for ordinary manifolds (like, e.g., vector fields and differential forms, Frobenius theorem, integration) have a generalization to supermanifolds. This allows one to use geometric intuition to understand many algebraic objects of current use (like differential forms or multivector fields). Another advantage is that many interesting geometric structures (like Poisson, Courant, generalized complex) may be reformulated in terms of super symplectic geometry (with a refinement of the super grading). Reduction methods for the above structure may be unified in terms of super symplectic reduction. Using integration and map spaces (AKSZ method), one can associate to these structures topological fields theories, one example of which is the Poisson sigma model.