SFB-Seminartag

ZEIT:
28.6.2005, 15:30 Uhr - 18:00 Uhr

ORT:
Hörsaal ZIB
Takustraße 7
14195 Berlin-Dahlem

PROGRAMM:

15:30 - 16:30 **Prof. Dr. Klaus Mohnke (HU)**

How to count holomorphic curves
I will recall how certain non-compactness phenomena for solution spaces of (partial) differential equations lead algebraic structures: chain complexes in Floer theory, quantum cup product in Gromov-Witten theory. Symplectic field theory describes the algebraic formalism to count a more general class of holomorphic curves: maps of a punctured Riemann surface into symplectic manifolds with a certain end structure with controlled behaviour at the punctures. The non-compactness is a mixture of breaking Floer trajectories, Gromov bubbling and Deligne-Mumford pinching. Finally, I will attempt to outline what the invariants should give for the cotangent bundle of a closed manifold.

16:30 - 17:00 Kaffeepause

17:00 - 18:00 **Dr. Alan Rendall (AEI)**

Cosmic acceleration and dark energy
It is less than ten years since the majority of astrophysicists became convinced that the expansion of our universe is accelerated. This requires some kind of repulsive force which overcomes the normal gravitational attraction. The cause of this has acquired a name, dark energy, but nobody knows what exactly dark energy is. Many models

Kontakt:
Humboldt-Universität zu Berlin . Institut für Mathematik
SFB 647 . Unter den Linden 6 . 10099 Berlin
Tel. +49 30 2093 1804 . Fax. +49 30 2093 2727
sfb647@math.hu-berlin.de

have been proposed and it is natural that one rich source of these is string theory. Questions about these models where mathematicians have a contribution to make are: what is the exact definition of the models, which of them are really different and what is the dynamics of the solutions of the field equations? In this talk, after presenting the necessary background on cosmology, I will cover some of these issues. In particular I will discuss k-essence models and the special case of the tachyon.

Kontakt:
Humboldt-Universität zu Berlin . Institut für Mathematik
SFB 647 . Unter den Linden 6 . 10099 Berlin
Tel. +49 30 2093 1804 . Fax. +49 30 2093 2727
sfb647@math.hu-berlin.de