Seminar des SFB 647

ZEIT:
9.11.2009, 15:00 Uhr - 18:00 Uhr

ORT:
Humboldt-Universität zu Berlin
Auditorium der Universitätsbibliothek
Jacob-und-Wilhelm-Grimm-Zentrum
Geschwister-Scholl-Straße 1/3
10117 Berlin

PROGRAMM:

15:00 - 16:00 **Dr. Nadav Drukker**

Loop operators in four dimensional gauge theories, the classification of curves on Riemann surfaces and Liouville theory

A large family of four dimensional supersymmetric gauge theories was recently constructed by compactifying a six dimensional theory on a Riemann surface. The couplings of the gauge theory are in one-to-one correspondence with the complex moduli of the Riemann surface. In particular, degenerate surfaces lead to weakly coupled gauge theories. In this talk I will address the question of classifying supersymmetric loop operators (Wilson, 't Hooft and dyonic) in the gauge theory, and its relation to the classification of curves on the Riemann surface and the Dehn-Thurston theorem. I will also comment on the evaluation of the expectation value of the loop operators, which can be done by studying Liouville theory, or quantum Teichmüller theory on the surface.

16:00 - 16:30 Kaffeepause

16:30 - 17:30 **Dr. habil. Björn Andreas**

Geometric structures related to string theory

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String theory provides many fresh ideas for studying geometrical structures on manifolds.
Some of them are guided by physical intuition and require a rigorous mathematical analysis and a proof of their existence.
In this talk we will give an example which illustrates how
a new concept of geometric structure will emerge out of combining information
of metrics, submanifolds, and bundles with special structures.
We show how this leads to interesting questions at the junction
of algebraic and differential geometry.

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