



SFB-Seminartag

TIME:

15th May 2007, 4:00 – 7:00 pm

LOCATION:

Humboldt-Universität zu Berlin
Invalidenstraße 42, Nordbau, Hörsaal 8

PROGRAM:

4:00 – 5:00 pm **DR. GEORG HEIN** (FU)

What is Stability?

The concept of stability plays an important role in algebraic geometry. I want to give several examples of stability which appear in the classification theory of vector bundles and algebraic varieties. I also want to explain, why stability is as well an open as a closed condition. At the end, I want to show how we can define stability for objects in the derived category. This leads to new compactifications of moduli spaces.

5:00 – 5:30 pm Break/ Kaffeepause

5:30 – 6:30 pm **DR. BRIAN SMITH** (FU)

Blow-up in the parabolic scalar curvature equation

Consider a manifold foliated by hypersurfaces. Suppose that the intrinsic geometry of the hypersurfaces has been specified. We would like to obtain a manifold of prescribed scalar curvature in a non-conformal way by modifying the metric only in a direction transverse to the foliation. If the hypersurfaces are to have positive mean curvature, this gives rise to a nonlinear parabolic equation for the transversal component of the metric in which the foliating function plays the role of the time variable. It is easily seen by using the maximum principle that in many cases of physical interest the solution blows up. In this talk we consider the situation in which the blow-up corresponds to a horizon, and the stability of this phenomenon is addressed.

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