



JACOBS
UNIVERSITY

Mathematics Colloquium at Jacobs University Bremen

FABRIZIO CATANESE

(Universität Bayreuth)

will speak on

*Local Fundamental Groups of Complex Surfaces
(an Extension of Mumford's Theorem)*

Date: Monday, April 7, 2008

Time: 17:15

Place: Lecture Hall Research II, Jacobs University

Abstract:

Given a complex surface S and a compact connected union D of complex curves in it, the local fundamental group Γ around D is the fundamental group of the complement $T - D$, where T is a 'good' tubular neighbourhood of D . Γ is also the fundamental group of the 3-manifold Σ which is the boundary of T . An important theorem of David Mumford was to show that Γ is nontrivial if D comes from the resolution of a normal surface singularity.

We shall present a strong extension of Mumford's theorem. Namely, since the fundamental group Γ surjects onto the fundamental group of D , with Kernel \mathcal{K} normally generated by loops γ_i around the irreducible components C_i of D , we shall show that each γ_i is nontrivial provided that the canonical curve K of the minimal normal crossings resolution intersects non negatively the smooth components of genus 0. We shall also discuss further questions, such as: when has γ_i infinite order? when is \mathcal{K} finitely generated?

Colloquium Tea at ca. 16:45 in the Tea Room of Research II, close to the lecture hall. Everybody is welcome!

M. STOLL