IU B International University Bremen

Mathematics Colloquium at IUB

Ilya Kapovich

(University of Illinois at Urbana-Champaign)

will speak

On algebraic rigidity of random quotients of the modular group

Date: **Monday, March 27, 2006**
Time: **17:15**
Place: **Lecture Hall Research II, IUB**

Abstract:
We show that for any positive integer $m \geq 1$, m-relator quotients of the modular group $M = \mathrm{PSL}(2, \mathbf{Z}) = \langle a, b \mid a^2 = b^3 = 1 \rangle$ generically satisfy a very strong Mostow-type *isomorphism rigidity*. In particular, we prove if two such quotients are isomorphic then their Cayley graphs on the *given* generating set a, b are isometric. This allows us to compute the precise asymptotics of the number $I_m(n)$ of *isomorphism types* of m-relator quotients of M where all the defining relators are cyclically reduced words of length n in M. We also prove that random quotients of M are "essentially algebraically incompressible", that is, they do not admit a finite group presentation of length much shorter than the given one. This talk is based on joint work with Paul Schupp.

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

M. Stoll