

The 21 Century COE Project  
Exploring New Science by Bridging Particle-Matter Hierarchy

**Short-term Foreign Researchers**  
**Research Report**

Name: Peter Brinkmann

Affiliation: University of Illinois at Urbana Champaign

Host Researcher in Tohoku University: Koji Fujiwara

Your Stay Period in Japan: From 2003.12.5 to

Title of Research in Japan:

Free group automorphism

---- Notes ----

Please write a research report of one or more pages and submit it with this cover to your host researcher till the end of this March.

## activity report:

Professor Brinkmann visited Sendai on 2003.12.5 and gave a talk at Max Dehn seminar at the mathematical institute at Tohoku University. The host is Koji Fujiwara at Math Institute. This talk was part of the activities of the COE project.

The title of the talk was

"Dynamics of free group automorphisms" .

The abstract of the talk given by the speaker is

"We present a coarse convexity result for the dynamics of automorphisms of finitely generated free groups. As an application, we obtain an algorithm that detects whether two elements of the free group are contained in the same orbit of a given automorphism. "

This talk is about a recent development in the field of Geometric group theory, and it must have been very important to the audience, including a few professors and several graduate students from the institute. We had an active discussion with the speaker during and after the talk, and the speaker found his visit very useful.