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

Short-term Foreign Researchers
Research Report

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Affiliation: Technishe Universitat Berlin

Host Researcher in Tohoku University: Motoko Kotani

Your Stay Period in Japan: From 10 Feb   to   22 Feb 2003
Title of Research in Japan:

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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.

Short-term Foreign Researchers,
Research Report, 2004.2.10–2004.2.22

During my stay at Mathematical Institute, Tohoku University, from 10th Feb. to 22nd Feb. I attended the conference
"Spectral Analysis on Magnetic Schrödinger operators"
organized by Prof.Kotani, partially supported by the 21st century COE program of Tohoku University, and gave a talk with the title:
"Quantized edge currents and Chern numbers
    for magnetic Schrödinger operators".
It was fruitful to see many Japanese mathematicians of various fields and exchanged informations with them during the conference.

Afterwards, I had an opportunity to discuss "Anderson localization for a random model" with Ass.Prof.F.Nakano, Math.Inst. Tohoku University. It is closely related with my research interest.

Mainly, during my stay, Prof.Kotani and I proceeded our project:
" C^*-algebra approach toward the spectral analysis
    of the Harper operator".
Our plan is reconstruct all the semi-classical analysis by Helffer-Sjöstrabd by using the C^* algebra tools developed originally by A. Connes and J. Bellissard. We got useful suggestions from Lec.S.Fujiie, Math.Inst.Tohoku University concerning FBI and FIO, and microlocal analysis, which would get important when we use the Fourier-Bros-Iagolnitzer transform, or the WKB in the phase space in terms C^*-algebra.

Project went well . Difficulties of our problems was localized and we got some idea to resolve it. We have now focalized on one particular problem we can attack.

As a conclusion, my stay was very fruitful to our research project.

磁場付きシュレジンガー作用素のスペクトル解析

研究集会のご案内

日時：2004年2月12日（木）〜2月13日（金）
場所：東北大学理学部（青葉山キャンパス）川井ホール

※プログラムの順番は多少変更があるかもしれません

プログラム

2月12日（木）

10：00−11：00
藤家雪朗氏（東北大学）: Setsuro Fujiie (Tohoku University)
WKB method and spectral asymptotics

11：15−12：15
Schulz-Baldes, Hermann 氏 (TU Berlin) *
Quantized edge currents and Chern numbers for magnetic Schroedinger operators

14：00−15：00
Yates, Stuart 氏 (Adelaide) **
Algebraic eigenvalues and the Harper operator on non-amenable graph

15：15−16：15
峯 拓矢（京都大学）:Takuya Mine(Kyoto University)*
The spectrum of magnetic Schrödinger operators with periodic delta-like magnetic fields

お茶

16：45−17：45
桑原 類史氏 (徳島大学) : Ruishi Kuwabara(Tokushima University)**
On quantization condition for magnetic systems

２月１３日（金）

１０：００−１１：００
中野 史彦氏 (東北大学):Fumihiko Nakano (Tohoku University)
Anderson localization for a random flux model

１１：１５−１２：１５
石渡 聡氏 (筑波大学):Satoshi Ishiwata(Tsukuba University)
Random walks on nilpotent covering graphs

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