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**RIMS Kôkyûroku Bessatsu B91**

# Various aspects of integrable systems

edited by Kazuki Maeda

February, 2023

Research Institute for Mathematical Sciences  
Kyoto University

*RIMS Kôkyûroku Bessatsu B91*

*Various aspects of integrable systems*

*August 25 ~27, 2021*

*edited by Kazuki Maeda*

*February, 2023*

*Research Institute for Mathematical Sciences*

*Kyoto University, Kyoto, Japan*

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## Preface

This volume is the proceedings of the workshop “Various aspects of integrable systems” held from August 25 to August 27, 2021. This workshop was supported by the joint research program of the Research Institute for Mathematical Sciences (RIMS), an International Joint Usage/Research Center located in Kyoto University. The workshop was originally scheduled for September 2020, but unfortunately was cancelled due to the COVID-19 pandemic. Although the pandemic was not yet over in 2021, we were able to hold the workshop using Zoom video meeting system.

The aim of the workshop was to connect researchers working on classical or quantum integrable systems with professions working on various mathematical objects such as applied mathematics, discrete differential geometry, number theory, etc. There were 13 lectures and 89 participants during the workshop. This volume collects 7 contributions from the speakers. All the papers have been refereed and are in their final forms.

I would like to express my gratitude to all participants, invited speakers, and RIMS staff for their kind cooperation under these difficult circumstances. I also appreciate the helps of anonymous referees.

February, 2023  
Kazuki Maeda

## Program

### RIMS Workshop 2021

#### Various aspects of integrable systems

2021 年度 RIMS 共同研究（公開型）

「可積分系数理の諸相」

#### August 25 (Wed)

- 13:40–14:30 柳澤大地  
非マルコフ完全非対称単純排他過程の流量の近似式
- 14:40–15:30 松家敬介  
超離散化可能な反応拡散系の離散化の諸性質
- 15:50–16:40 瀬川悦生  
量子ウォークから動機される幾つかの全域部分グラフの数え上げ

#### August 26 (Thu)

- 9:30–10:20 安本真士  
可積分変換による離散曲面の構成
- 10:30–11:20 松浦望  
離散キルヒホフ弾性棒の明示公式
- 11:40–12:30 永井敦  
離散ソボレフ不等式とその応用
- 13:40–14:30 筧三郎  
格子ソリトン方程式と戸田階層
- 14:40–15:30 山根英司  
 $\mu$ -Camassa–Holm 方程式の大域的実解析解
- 15:50–16:40 蛭子彰仁  
一般超幾何微分方程式  ${}_3E_2$  の  $x = 1$  における正則解

#### August 27 (Fri)

- 10:30–11:20 竹山美宏  
多重ゼータ値の  $q$  類似とその数論への応用
- 11:30–12:20 名古屋創  
不確定特異点型共形ブロックとパンルヴェ方程式
- 13:40–14:30 朴佳南  
 $E_6^{(1)}$  型  $q$  パンルヴェ方程式のラックス形式
- 14:40–15:30 竹村剛一  
On  $q$ -Heun equation and  $q$ -Painlevé equation

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