

Aug. 27, 2022

## Akihito Yoneyama

Research Fellow (DC2) at Japan Society for the Promotion of Science  
Institute of Physics, Graduate School of Arts and Sciences, the University of Tokyo  
Email: yoneyama.aki@gmail.com / yoneyama@gokutan.c.u-tokyo.ac.jp

### Education

---

- Apr. 2020 -  
Doctoral Course  
Institute of Physics, Graduate School of Arts and Sciences, the University of Tokyo  
Supervisor: Prof. Atsuo Kuniba
- Apr. 2018 - Mar. 2020  
Master Course  
Institute of Physics, Graduate School of Arts and Sciences, the University of Tokyo  
Supervisor: Prof. Atsuo Kuniba
- Apr. 2014 - Mar. 2018  
Department of Physics, the University of Tokyo

### Academic Work Experience

---

- Apr. 2021 - Mar. 2023  
Research Fellow (DC2) at Japan Society for the Promotion of Science  
The University of Tokyo, Tokyo, Japan
- Sep. 2020 - Jan. 2021  
Teaching assistant for the course *Electromagnetics B*  
The University of Tokyo, Tokyo, Japan

### Award

---

- Mar. 2020  
Encouragement Award, Graduate School of Arts and Sciences, the University of Tokyo

### Grant

---

- Apr. 2021 - Mar. 2023  
Grant-in-Aid for Japan Society for the Promotion of Science Research Fellow (DC2)

Project/Area Number: 21J11742

Research Title: “Exploring the nature of promise problems that allows an exponential speedup in quantum computation”

## Paper

---

5. A.Kuniba, S.Matsuike, A.Yoneyama, “New solutions to the tetrahedron equation associated with quantized six-vertex models”, arXiv:2208.10258
4. A.Yoneyama, “Boundary from bulk integrability in three dimensions: 3D reflection maps from tetrahedron maps”, Math. Phys. Anal. Geom. **24** 21 (2021), arXiv:2103.01105
3. A.Yoneyama, “Tetrahedron and 3D reflection equation from PBW bases of the nilpotent subalgebra of quantum superalgebras”, Commun. Math. Phys. **387** 481-550 (2021), arXiv:2012.13385
2. A.Kuniba, M.Okado and A.Yoneyama, “Reflection  $K$  matrices associated with an Onsager coideal of  $U_p(A_{n-1}^{(1)})$ ,  $U_p(B_n^{(1)})$ ,  $U_p(D_n^{(1)})$  and  $U_p(D_{n+1}^{(2)})$ ”, J. Phys. A: Math. Theor. **52** 375202 27pages (2019), arXiv:1904.05653
1. A.Kuniba, M.Okado and A.Yoneyama, “Matrix product solution to the reflection equation associated with a coideal subalgebra of  $U_q(A_{n-1}^{(1)})$ ”, Lett. Math. Phys. **109** 2049-2067 (2019), arXiv:1812.03767

## Oral Presentation at International Conference

---

2. Jul. 18-22, 2022 @ University of Strasbourg  
“Tetrahedron and 3D reflection equation from PBW basis of the nilpotent subalgebra of quantum superalgebras”, The 34th International Colloquium on Group Theoretical Methods in Physics
1. Mar. 5-7, 2019 @ the University of Tokyo (Invited)  
“Matrix product solution to the reflection equation associated with a coideal subalgebra of  $U_q(A_{n-1}^{(1)})$ ”, Infinite Analysis 19 Quantum Symmetries and Integrable Systems

## Invited Seminar

---

2. Jan. 14, 2021 @ the University of Tokyo (Online) (Host: Ralph Willox)  
“Tetrahedron and 3D reflection equation from PBW bases of the nilpotent subalgebra of quantum superalgebras”, Discrete Mathematical Modelling Seminar
1. Apr. 10, 2019 @ Rikkyo University (Host: Jimbo Michio)  
“Review about tetrahedron equation and technical details about [KOY18]”

## Oral Presentation at Domestic Conference

---

5. Oct. 18-22, 2021 @ Online  
“3D reflection maps from tetrahedron maps”, Combinatorial Representation Theory and Connections with Related Fields (RIMS Workshop), RIMS Kôkyûroku
4. Sep. 14-17, 2021 @ Chiba University (Online)  
“3D reflection maps from tetrahedron maps”, Mathematical Society of Japan Autumn Meeting 2021
3. Jun. 25-28, 2021 @ Online  
“3D reflection maps from tetrahedron maps”, Algebraic Lie Theory and Representation Theory
2. Mar. 15-18, 2021 @ Keio University (Online)  
“Tetrahedron and 3D reflection equation from PBW basis of the nilpotent subalgebra of quantum superalgebras”, Mathematical Society of Japan Spring Meeting 2021
1. Feb. 10-14, 2021 @ Online  
“Tetrahedron equation from PBW bases of the nilpotent subalgebra of quantum superalgebras”, Mathsci Freshman Seminar 2021

## Skill

---

Python, Mathematica, C