束红非

(更新于 2022年5月)

个人信息

出生日期	1991.07.12
性别	男
籍贯	河南省禹州市
通讯地址	北京市怀柔区雁栖湖西路雁栖岛11号楼
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工作经历

博士后 2021.10–至今

北京雁栖湖应用数学研究院*(BIMSA)*

清华大学数学科学中心*(YMSC)*

主要职责：学术研究，以及必要的课程助教工作

博士后 2019.09–2021.08

Nordic Institute for Theoretical Physics (Nordita)

主要职责：学术研究

教育背景

博士 2016.4–2019.3

东京工业大学，物理

博士生导师：Katsushi Ito（东京工业大学，教授）

毕业论文题目：“ODE/IM correspondence and its applications”

硕士 2014.4–2016.3

东京工业大学，物理

硕士生导师：Katsushi Ito（东京工业大学，教授）

毕业论文题目：“Minimal surface in AdS spacetime and ODE/IM correspondence”

本科 2010.4–2014.3

东京工业大学，物理

导师：Katsushi Ito（东京工业大学，教授）

科研方向

目前本人主要致力于以下研究方向：

- 弦理论，规范/引力对偶
- 可积系统，微分方程/量子可积系对应
- Bethe/规范对应，可积系统在规范场论中的应用

- 其它非微扰量子力学/量子场论方法

主持科研项目

截至目前为止，主持过的科研项目：

- 北京市博士后科研资助 2022年–2023年
  项目名：可积系统在非微扰规范场论中的应用
  经费额：5万人民币
- 日本 Grant-in-Aid for JSPS Fellows 2017年–2019年
  项目名：基于AdS空间极小面积可积性构造的规范/引力对偶的验证
  经费额：11.5万人民币 (190万日元，按照2019年汇率计算)

荣誉及获奖情况

截至目前为止，获得过的荣誉：

- 瑞典 Nordita Fellowship 2019年–2021年
- 日本 JSPS Research Fellowship for Young Scientists 2017年–2019年

教学经历

截至目前为止，担任过如下课程的助教：

- N=2超对称入门 2022年春季
  主要职责：部分课程（讨论部分）及答疑
- 经典力学，电磁学（本科生） 2014年–2017年
  主要职责：习题课授课，作业批改、答疑

发表文章

[1] "Bethe-State Counting and the Witten Index,"
Hongfei Shu, Peng Zhao, Rui-Dong. Zhu and Hao Zou,
arXiv:2210.07116 [hep-th], 期刊投稿中.

[2] "Shadow Celestial Amplitude,"
Chi-Ming. Chang, Wei Cui, Wen-Jie Ma, Hongfei Shu and Hao Zou,
arXiv:2210.04725 [hep-th], 期刊投稿中.

[3] "Integrability, susy $SU(2)$ matter gauge theories and black holes,"
Davide Fioravanti, Daniele Gregori and Hongfei Shu,
arXiv:2208.14031 [hep-th], 期刊投稿中.

[4] "TBA-like equations for non-planar scattering amplitude/Wilson lines duality at strong coupling,"
Hao Ouyang and Hongfei Shu (通讯作者),
JHEP **05** (2022), 099, [arXiv:2202.10700 [hep-th]].

[5] "Wall-crossing of TBA equations and WKB periods for the third order ODE,"
Katsushi Ito, Takayasu Kondo and Hongfei Shu(通讯作者),

Nucl. Phys. B 979 (2022), 115788, [arXiv:2111.11047 [hep-th]].

[6] "WKB periods for higher order ODE and TBA equations,"
Katsushi Ito, Takayasu Kondo, Kohei Kuroda and Hongfei Shu (通讯作者),
JHEP **10** (2021), 167 [arXiv:2104.13680 [hep-th]].

[7] "U(1) CS Theory vs SL(2) CS Formulation: Boundary Theory and Wilson Line,"
Xing Huang, Chen-Te Ma, Hongfei Shu and Chih-Hung Wu,
arXiv:2011.03953 [hep-th]

[8] "Extended systems of Baxter Q-functions and fused flags I: simply-laced case,"
Simon Ekhammar, Hongfei Shu and Dmytro Volin,
arXiv:2008.10597 [math-ph].

[9] "$T\bar{T}$ deformation of chiral bosons and Chern-Simons AdS_3 gravity,"
Hao Ouyang and Hongfei Shu (通讯作者),
Eur. Phys. J. C **80** (2020) no.12, 1155 [arXiv:2006.10514 [hep-th]]

[10] "QQ-system and non-linear integral equations for scattering amplitudes at strong coupling,"
Davide Fioravanti, Marco Rossi and Hongfei Shu
JHEP **12** (2020), 086 [arXiv:2004.10722 [hep-th]].

[11] "ODE/IM correspondence for affine Lie algebras: A numerical approach,"
Katsushi Ito, Takayasu Kondo, Kohei Kuroda and Hongfei Shu (通讯作者),
J. Phys. A **54** (2021) no 4, 044001 [arXiv:2004.09856 [hep-th]].

[12] "Quantum correction of the Wilson line and entanglement entropy in the pure AdS_3 Einstein gravity theory,"
Xing Huang, Chen-Te. Ma and Hongfei Shu
Phys. Lett. B **806** (2020), 135515 [arXiv:1911.03841 [hep-th]].

[13] "TBA equations for the Schrödinger equation with a regular singularity,"
Katsushi Ito and Hongfei Shu (通讯作者)
J. Phys. A **53** (2020) no.33, 335201 [arXiv:1910.09406 [hep-th]].

[14] "Correlation functions, entanglement and chaos in the $T\overline{T}/J\overline{T}$-deformed CFTs,"
Song He and Hongfei Shu (通讯作者),
JHEP **02** (2020), 088 [arXiv:1907.12603 [hep-th]].

[15] "Integrability and Spectral Form Factor in Chern-Simons Formulation,"
Chen-Te Ma and Hongfei Shu,
Int. J. Mod. Phys. A **35** (2020) no.24, 2050143 [arXiv:1902.10279 [hep-th]].

[16] "TBA equations and resurgent Quantum Mechanics,"
Katsushi Ito, Marcos Mariño and Hongfei Shu (通讯作者),
JHEP **01** (2019), 228 [arXiv:1811.04812 [hep-th]].

[17] "T-duality to Scattering Amplitude and Wilson Loop in Non-commutative Super Yang-Mills Theory,"
Song He and Hongfei Shu (通讯作者),
JHEP 1808, 172 (2018) [arXiv:1806.02707 [hep-th]].

[18] "Massive ODE/IM Correspondence and Non-linear Integral Equations for $A_r^{(1)}$-type modified Affine Toda Field Equations,"

Katsushi Ito and Hongfei Shu (通讯作者),
J. Phys. A 51, no. 38, 385401 (2018) [arXiv:1805.08062 [hep-th]].

[19] "ODE/IM correspondence and the Argyres-Douglas theory"
Katsushi Ito and Hongfei Shu (通讯作者),
JHEP 1708, 071 (2017) [arXiv:1707.03596[hep-th]].

[20] "ODE/IM correspondence for modified $B_2^{(1)}$ affine Toda field equation"
Katsushi Ito and Hongfei Shu (通讯作者),
Nucl. Phys. B 916, 414 (2017)[arXiv:1605.04668[hep-th]].

学术报告

- Korea Institute for Advanced Study, September 19, 20122, Online talk, "Wall-crossing of TBA equations and WKB periods for the higher order ODE"
- The 3rd national conference on field theories and string theory, August 26, 2022, Beijing, "Completeness of spin chain via Bethe/Gauge correspondence."
- Academy of Mathematics and Systems Science Chinese Academy of Sciences, August 20,2022, Online talk. "ODE/IM correspondence and Resurgent Quantum Mechanics."
- Beijing International Center for Mathematical Research, April 26, 2022, Peking University, "Wall-Crossing of TBA Equations and WKB Periods for the Higher Order ODE."
- Institute for Advanced Study, Soochow University, November 25, 2021, Online talk. "TBA/WKB correspondence and Resurgent Quantum Mechanics."
- East Asia Joint Symposium on Fields and Strings, November 23, 2021, Online talk. "Wall-crossing of TBA equations and WKB periods for the higher order ODE."
- Department of Physics, Jilin University, November 10, 2021, Online talk. "Wall-crossing of TBA equations and WKB periods for the higher order ODE."
- Center for Joint Quantum Studies (CJQS), May 14, 2020, Tianjin University, Online talk. "ODE/IM correspondence and its application to scattering amplitude/Wilson loop dual"
- Sezione INFN di Bologna, Department of Physics and Astronomia, University di Bologna, November 14 2019, Bologna, Italy, "TBA system and schrödinger equation"
- Korea Institute for Advanced Study, July 4, 2019, Seoul, Korea, "TBA equations and resurgent Quantum Mechanics"
- School of Physics and Telecommunication Engineering, South China Normal University, May 14, 2019, Guangzhou, China. "TBA equations and Schrödinger equation with angular momentum"
- Department of Physics, Sun Yat-sen University, May 7, 2019, Guangzhou, China
  "TBA equations and resurgent Quantum Mechanics"
- School of Physics and Astronomy, Sun Yat-sen University, May 5, 2019, Guangzhou, China
  "Solving Quantum Mechanics by using Integrability"
- Department of Physics, Jilin University, April 24, 2019, Jilin China
  "Thermodynamic Bethe ansatz equations and resurgent Quantum Mechanics"
- String Theory and Quantum Field Theory Conference, Fudan University, March 13, 2019, ShangHai China "TBA equations and resurgent Quantum Mechanics"

- Department of Physics, Rikkyo University, May 29, 2018, Tokyo Japan
  "ODE/IM correspondence and its application to N=2 gauge theories"
- Physical Society of Japan Spring meeting 2018, Mar 22 2018, Tokyo Japan
  "ODE/IM correspondence for modified affine Toda field equation"
- Department of Physics, Kyoto University, Dec 13, 2017, Kyoto Japan
  "ODE/IM correspondence and its application to N=2 SCFT"
- Keio University, Sep 6, 2017, Tokyo Japan
  "ODE/IM correspondence and the Argyres-Douglas theory"
- Max Planck Institute, Aug 14, 2017, Potsdam German
  "ODE/IM correspondence and the Argyres-Douglas theory"
- Department of Physics, Sichuan University, May 26, 2017, Chengdu China: "ODE/IM correspondence and the Argyres-Douglas theory"
- Institute of Theoretical Physics Beijing, May 15, 2017, Beijing China
  "ODE/IM correspondence and the Argyres-Douglas theory"
- Physical Society of Japan Spring meeting 2017, Mar 20 2017, Osaka Japan
  "ODE/IM correspondence and Argyres-Douglas theory"
- Physical Society of Japan Spring meeting 2016, Mar 22, 2016, Senda, Japan
  "T-Q relation for modified affine B_2 Toda field equation"
- Physical Society of Japan Autumn meeting 2015, Sep 27, 2015, Osaka, Japan
  "Affine B_2 Toda field theory and AdS4 minimal surface"

参与主办的会议及系列演讲

- BIMSA String workshop, Nov 8-Nov 11, 2022.
- BIMSA and Soochow University Join HEP-TH Seminar, May 2022 – 至今
  https://jointhepth.github.io
- BIMSA-Geometry and Physics Seminar, Jan 2022 – Sep 2022
  https://www.bimsa.cn/wzsy
- The 1st SUIAS workshop in HEP: Supersymmetry and Gravitation, August 8 - 12, 2022.
  https://soochowiashep.github.io/Soochow-first-HEP/

相关技能

- 自然语言：汉语（母语）、英语（阅读、书写以及学术交流）、日语(阅读、书写以及学术交流)