



# Daisuke NOTO, Ph.D.

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## EDUCATION

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<b>Doctor of Engineering</b>   <i>Fluid mechanics</i> Graduate School of Engineering, Hokkaido University	Apr. 2019 – Sep. 2021 Sapporo, Japan
<b>Master of Engineering</b>   <i>Fluid mechanics</i> Graduate School of Engineering, Hokkaido University	Apr. 2017 – Mar. 2019 Sapporo, Japan
<b>Bachelor of Engineering</b>   <i>Fluid mechanics</i> Faculty of Engineering, Hokkaido University	Apr. 2013 – Mar. 2017 Sapporo, Japan

## CAREER

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<b>Postdoctoral Research Fellow</b>   <i>Japan Society for the Promotion of Science</i> JSPS Research Fellow (PD) at Hokkaido University	Oct. 2021 – Present Sapporo, Japan
<b>Research Fellow</b>   <i>Japan Society for the Promotion of Science</i> JSPS Research Fellow (DC1) at Hokkaido University	Apr. 2019 – Sep. 2021 Sapporo, Japan
<b>Assistant Researcher</b>   <i>Internship aided by Japan Student Services Organization</i> Department of Magnetohydrodynamics, Helmholtz-Zentrum Dresden-Rossendorf	Summer 2017 – Spring 2018 Dresden, Germany

## RESEARCH EXPERIENCE

### Experimental Study on Thermal Convection

- Design and construction of experimental facilities for optical visualization
- Optical measurements of flow fields of rotating, double-diffusive, horizontal convection ...
- Establishment of in-house analytic algorithms based on image processing techniques

### Use and Establishment of Optical Measurement Techniques

- Deep understandings for classical measurement techniques, e.g., PIV, PTV, thermochromic liquid crystals ...
- Use of color information and artificial neural networks in flow field measurements
- Measurements of multiphase, rotating, non-Newtonian flows ...

### Collaborative Research

- Collaboration with Japan Agency for Marine-Earth Sciences and Technology from the perspectives of geo-/astrophysical fluid dynamics since 2016
- Collaboration with Helmholtz-Zentrum Dresden-Rossendorf from the perspectives of geo-/astrophysical fluid dynamics and thermo-fluid engineering since 2017

## TEACHING EXPERIENCE

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<b>Teaching Fellow of “Exercise of Fluid Mechanics”</b> Faculty of Engineering, Hokkaido University	Winter 2019 – 2020 Sapporo, Japan
<b>Teaching Assistant of “Exercise of Fluid Mechanics”</b> Faculty of Engineering, Hokkaido University	Winter 2017 Sapporo, Japan

## PUBLICATIONS

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Recent five most important ——

**“Developing horizontal convection against stable temperature stratification in a rectangular container”**

D. Noto *et al.*, 2021, *Physical Review Fluids*, **6**, 083501, DOI: [10.1103/PhysRevFluids.6.083501](https://doi.org/10.1103/PhysRevFluids.6.083501)

**“In situ color-to-depth calibration: toward practical three-dimensional color particle tracking velocimetry”**

D. Noto *et al.*, 2021, *Experiments in Fluids*, **62**, 131, DOI: [10.1007/s00348-021-03220-9](https://doi.org/10.1007/s00348-021-03220-9)

**“Stepwise transitions in spin-up of rotating Rayleigh–Bénard convection”**

D. Noto *et al.*, 2021, *Journal of Fluid Mechanics*, **911**, A43, DOI: [10.1017/jfm.2020.1052](https://doi.org/10.1017/jfm.2020.1052)

**“Simultaneous optical measurement of temperature and velocity fields in solidifying liquids”**

S. Anders, D. Noto *et al.* (Equivalent contribution to the 1st author), 2020, *Experiments in Fluids*, **61**, 113, DOI: [10.1007/s00348-020-2939-3](https://doi.org/10.1007/s00348-020-2939-3)

**“Horizontal diffusive motion of columnar vortices in rotating Rayleigh–Bénard convection”**

D. Noto *et al.*, 2019, *Journal of Fluid Mechanics*, **871**, pp.401 – 426, DOI: [10.1017/jfm.2019.313](https://doi.org/10.1017/jfm.2019.313)

Other publications ——

D. Noto and Y. Tasaka, 2021, *Exp. Fluids*, **62**, 111, DOI: [10.1007/s00348-021-03208-5](https://doi.org/10.1007/s00348-021-03208-5)

D. Noto *et al.*, 2021, *Exp. Therm. Fluid Sci.*, **127**, 110394, DOI: [10.1016/j.expthermflusci.2021.110394](https://doi.org/10.1016/j.expthermflusci.2021.110394)

D. Noto *et al.*, 2020, *Phys. Rev. Res.*, **2**, 043111, DOI: [10.1103/PhysRevResearch.2.043111](https://doi.org/10.1103/PhysRevResearch.2.043111)

K. Fujita *et al.*, 2020, *J. Vis.*, **23**, pp.635 – 647, DOI: [10.1007/s12650-020-00651-0](https://doi.org/10.1007/s12650-020-00651-0) (4th author)

S. Anders *et al.*, 2019, *Exp. Fluids*, **60**, 68, DOI: [10.1007/s00348-019-2703-8](https://doi.org/10.1007/s00348-019-2703-8) (2nd author)

D. Noto *et al.*, 2018, *J. Vis.*, **21**, pp.987 – 998, DOI: [10.1007/s12650-018-0510-6](https://doi.org/10.1007/s12650-018-0510-6)

## AWARDS

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<b>Power and Energy Systems Division, Outstanding Presentation Award</b> Outstanding presentation of young researchers (The Japan Society of Mechanical Engineers)	Nov. 2021
<b>Outstanding Presentation Award</b> Outstanding presentation of young researchers (The Japan Society of Fluid Mechanics)	Sep. 2021
<b>Outstanding Paper Award</b> Outstanding paper in <i>Journal of Visualization</i> (The Visualization Society of Japan)	Aug. 2020
<b>Outstanding Student Presentation Award</b> Outstanding presentation of students (Japan Geoscience Union Meeting)	May 2019
<b>Miura Prize</b> Graduated with distinction in Mechanical Engineering (The Japan Society of Mechanical Engineers)	Mar. 2019
<b>Outstanding Student Presentation Award</b> Outstanding presentation of students (Japan Geoscience Union Meeting)	May 2017

## GRANTS

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<b>Fukada Grant-in-Aid</b> Fukada Geological Institute	2020–2021
<b>Grant-in-Aid for JSPS Fellows (Grant No. JP19J20096)</b> Japan Society for the Promotion of Science	2019–2022

## QUALIFICATION / SKILLS

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**Academic Record:** GPA 3.8/4.0 (Ph.D. candidate in 2019-2021)

**Languages:** Japanese (Native), English (TOEIC L&R 905)

**Programming:** C, Python, Arduino

**Document Creation:** Microsoft Office, LaTeX