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Education B.Eng. Engineering, Waseda University, March 2014
M.Eng. Engineering, Waseda University, March 2016
Ph.D. Engineering, Waseda University, September 2018

Honors and Awards

JSCES Scholarship Award (2018)

Nagoya University High Performance Computing Research Project for Joint Computational Science, April 2018 – March 2019

Joint Usage/Research Center for Interdisciplinary Large-scale Information Infrastructures Joint Research Project April 2018 – March 2019

Publications Summary

5	Journal Articles Indexed by the Web of Science	1	Book Chapters
5	Invited Conference Papers	16	Contributed Conference Papers

Publications

Jornal Articles Indexed by the Web of Science

- 1 **Y. Otoguro**, K. Takizawa, and T.E. Tezduyar, “Space–time VMS computational flow analysis with isogeometric discretization and a general-purpose NURBS mesh generation method”, *Computers & Fluids*, **158** (2017) 189–200, doi: [10.1016/j.compfluid.2017.04.017](https://doi.org/10.1016/j.compfluid.2017.04.017).
- 2 K. Takizawa, T.E. Tezduyar, **Y. Otoguro**, T. Terahara, T. Kuraishi, and H. Hattori, “Turbocharger flow computations with the Space–Time Isogeometric Analysis (ST-IGA)”, *Computers & Fluids*, **142** (2017) 15–20, doi: [10.1016/j.compfluid.2016.02.021](https://doi.org/10.1016/j.compfluid.2016.02.021).
- 3 K. Takizawa, T.E. Tezduyar, and **Y. Otoguro**, “Stabilization and discontinuity-capturing parameters for space–time flow computations with finite element and isogeometric discretizations”, *Computational Mechanics*, **62** (2018) 1169–1186, doi: [10.1007/s00466-018-1557-x](https://doi.org/10.1007/s00466-018-1557-x).
- 4 **Y. Otoguro**, K. Takizawa, T.E. Tezduyar, K. Nagaoka, and S. Mei, “Turbocharger turbine and exhaust manifold flow computation with the Space–Time Variational Multiscale Method and Isogeometric Analysis”, *Computers & Fluids*, **179** (2019) 764–776, doi: [10.1016/j.compfluid.2018.05.019](https://doi.org/10.1016/j.compfluid.2018.05.019).
- 5 **Y. Otoguro**, K. Takizawa, T.E. Tezduyar, K. Nagaoka, R. Avsar, and Y. Zhang, “Space–time VMS flow analysis of a turbocharger turbine with isogeometric discretization: Computations with time-dependent and steady-inflow representations of the intake/exhaust cycle”, *Computational Mechanics*, published online, DOI: [10.1007/s00466-019-01722-2](https://doi.org/10.1007/s00466-019-01722-2), May 2019, doi: [10.1007/s00466-019-01722-2](https://doi.org/10.1007/s00466-019-01722-2).

Book Chapters

- 1 **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “A general-purpose NURBS mesh generation method for complex geometries”, in T.E. Tezduyar, editor, *Frontiers in Computational Fluid–Structure Interaction and Flow Simulation: Research from Lead Investigators under Forty – 2018*, Modeling and Simulation in Science, Engineering and Technology, 399–434, Springer, 2018, ISBN 978-3-319-96468-3, doi: [10.1007/978-3-319-96469-0_10](https://doi.org/10.1007/978-3-319-96469-0_10).

Invited Conference Papers

- 1 **Y. Ootoguro**, T. Terahara, K. Takizawa, T.E. Tezduyar, T. Kuraishi, and H. Hattori, “A higher-order ST-VMS method for turbocharger analysis”, in *Proceedings of the 13th Asian International Conference on Fluid Machinery*, Tokyo, Japan, (2015).
- 2 **Y. Ootoguro**, K. Takizawa, T.E. Tezduyar, and A. Bustcher, “Contact modeling of MAV clapping wings”, in *Proceedings of the 18th International Conference on Fluid Elements in Flow Problems*, Taipei, Taiwan, (2015).
- 3 **Y. Ootoguro**, T. Terahara, K. Takizawa, and T.E. Tezduyar, “A general-purpose mesh generation method for fluid mechanics computations with the IGA”, in *Extended Abstracts of USACM Conference on Isogeometric Analysis and Meshfree Methods*, California, USA, (2016).
- 4 **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Stabilization parameters for st flow computations with isogeometric discretizations in complex geometry”, in *Proceedings of IGA 2018*, Texas, USA, (2018).
- 5 K. Komiya, T. Kanai, **Y. Ootoguro**, M. Kaneko, K. Hirota, Y. Zhang, K. Takizawa, T.E. Tezduyar, M. Nohmi, T. Tsuneda, M. Kawai, and M. Isono, “Computational analysis of flow-driven string dynamics in a pump and residence time calculation”, *IOP conference series earth and environmental science*, **240** (2019) 062014, doi: [10.1088/1755-1315/240/6/062014](https://doi.org/10.1088/1755-1315/240/6/062014).

Contributed Conference Papers

- 1 **Y. Ootoguro**, K. Takizawa, T.E. Tezduyar, and A. Bustcher, “Contact algorithm for clapping wing”, in *Proceedings of the 63rd National Congress of Theoretical and Applied Mechanics*, Tokyo, Japan, (2014).
- 2 H. Mochizuki, K. Takizawa, T.E. Tezduyar, H. Uchiyama, H. Hattori, **Y. Ootoguro**, and T. Aoki, “Analysis of tsunami evacuation tower with a vertical axis windmill II”, in *Proceedings of the 28th Symposium on Computational Fluid Dynamics*, Tokyo, Japan, (2014).
- 3 **Y. Ootoguro**, T. Kuraishi, T. Terahara, K. Takizawa, and T.E. Tezduyar, “Space–time isogeometric analysis”, in *Extended Abstracts of JST CREST–PRESTO Symposium 2015 — Mathematics for the 22nd Century*, Tokyo, Japan, (2015).
- 4 **Y. Ootoguro**, T. Kuraishi, T. Terahara, K. Takizawa, and T.E. Tezduyar, “Space–time isogeometric analysis”, in *Proceedings of Numerical Analysis: New Developments for Elucidating Interdisciplinary Problems*, Kyoto, Japan, (2015).
- 5 **Y. Ootoguro**, T. Kuraishi, Y. Tsutsui, T. Kanai, H. Hattori, T. Sasaki, K. Takizawa, and T.E. Tezduyar, “Space–time finite element analysis using NURBS basis functions”, in *Proceedings of the Union Conference on Japan Society for Industrial and Applied Mathematics 2015*, Tokyo, Japan, (2015).
- 6 **Y. Ootoguro**, K. Takizawa, A. Bustcher, R. Zhang, and T.E. Tezduyar, “Contact modeling of MAV wing clapping”, in *Proceedings of KSME-JSME Joint Symposium on Computational Mechanics and CAE 2015*, Tokyo, Japan, (2015).
- 7 **Y. Ootoguro**, K. Takizawa, T.E. Tezduyar, and H. Mochizuki, “Numerical evaluation of turbocharger turbine performance with pulsating inflow”, in *Proceedings of the 21th Japan Society for Computational Engineering and Science Conference*, Niigata, Japan, (2016).
- 8 **Y. Ootoguro**, T. Terahara, K. Takizawa, and T.E. Tezduyar, “A general-purpose mesh generation method for fluid mechanics computations with the isogeometric analysis”, in *Proceedings of the 29th The Computational Mechanics Conference*, Aichi, Japan, (2016).
- 9 T. Ohara, T. Kuraishi, **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Thermo-fluid analysis of an exhaust-pipe flow with the actual channel geometry”, in *Proceedings of 2016 JSAE Annual Spring Congress*, Kanagawa, Japan, (2016).

- 10 T. Ohara, , **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Multiscale fluid analysis of an exhaust system at the main-flow and filter scales”, in *Proceedings of JSME 29th Computational Mechanics Division Conference*, Aichi, Japan, (2016).
- 11 T. Ohara, , **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Multiscale thermo-fluid analysis of an exhaust system at the main-flow and filter scales”, in *Proceedings of JSME 94th Fluids Engineering Conference*, Yamaguchi, Japan, (2016).
- 12 K. Nagaoka, **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Computational evaluation of turbocharger performance: Manifold and pulsating-inflow turbine”, in *Proceedings of the 30th Symposium on Computational Fluid Dynamics*, Tokyo, Japan, (2016).
- 13 H. Okamura, T. Ohara, **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Swirl flow effects in exhaust system analysis with resolved filter-scale flow”, in *Proceedings of the 30th Symposium on Computational Fluid Dynamics*, Tokyo, Japan, (2016).
- 14 K. Komiya, **Y. Ootoguro**, H. Uchikawa, K. Takizawa, and T.E. Tezduyar, “Interpretation of temporarily-periodic internal flows based on the time-dependent residence time”, in *Proceedings of the 31th Symposium on Computational Fluid Dynamics*, Kyoto, Japan, (2017).
- 15 K. Nagaoka, **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Turbocharger-turbine flow-mixing effects in exhaust system design”, in *Proceedings of the 31th Symposium on Computational Fluid Dynamics*, Kyoto, Japan, (2017).
- 16 T. Jitsukawa, **Y. Ootoguro**, K. Takizawa, and T.E. Tezduyar, “Aerodynamic effect of corrugated wing structure in wing flapping”, in *Proceedings of the 31th Symposium on Computational Fluid Dynamics*, Kyoto, Japan, (2017).

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