# FY 2024 Annual Report



#### **Unit Name**

#### Fluid Mechanics Unit

#### **Collaborations**

Gustavo Gioia, OIST, Japan, Turbulent Taylor-Couette flows

Marco Edoardo Rosti, OIST, Japan, Turbulent Rayleigh-Taylor instability

Gustavo Gioia, OIST, Japan, Turbulent Rayleigh-Taylor instability

Gustavo Gioia, OIST, Japan, Theory of spectral link in turbulent flows

#### **Research Personnel**

Tapan Sabuwala, Senior Staff Scientist
Julio Manuel Barros Junior, Staff Scientist
Chola Kalale, Postdoctoral Scholar
Vishnu Ravindran, Postdoctoral Scholar
Yajun Fan, Postdoctoral Scholar
Christian Butcher, Research Unit Technician
Daniel Isokpunwu, Research Unit Technician
Hanley Andrean, PhD Student

## Scholarly Contributions and Creative Productions (by Faculty)

#### Journal Article

1. Chakraborty, Pinaki, Christian Butcher, Julio Manuel Barros, Yasuo Higashi, Tinihau Meuel, Henly Ng, and Gustavo Gioia. 2024. "Okinawa Institute of Science and Technology – Taylor–Couette (OIST-TC): A New Experimental Set-up to Study Turbulent Taylor–Couette Flow." Flow 4 (October):E30.

### **Scholarly Contributions (by Unit Members)**

Name of Unit Member	Туре	Title	Outlet	Publisher	Year Pub
Ravindran Vishnu	Poster Presentation at Conference	Finite Amplitude Scaling in Transitional Pipe Flows	IUTAM Symposium on Laminar-Turbulent Transition, Nagano, Japan	IUTAM Symposium on Laminar-Turbulent Transition, Nagano, Japan	2024
Ravindran Vishnu	Poster Presentation at Conference	Finite Amplitude Scaling in Transitional Pipe Flows	Current Advances in Turbulence and multiphase flowS - 24CATS, OIST, Okinawa, Japan	Current Advances in Turbulence and multiphase flowS - 24CATS, OIST, Okinawa, Japan	2024

Name of Unit Member	Туре	Title	Outlet	Publisher	Year Pub
Ravindran Vishnu	Presentation at Conference	Understanding the scaling exponents in transitional pipe flows	77th Annual Meeting of the APS Division of Fluid Dynamics, Salt Lake City, USA	77th Annual Meeting of the APS Division of Fluid Dynamics, Salt Lake City, USA	2024
Hanley Andrean	Presentation at Conference	The double-edged sword of using simple physics model to understand the decay of a landfalling typhoon	Japan Society of Fluid Mechanics annual meeting 2024	Japan Society of Fluid Mechanics annual meeting 2024	2024
Hanley Andrean	Presentation at Conference	The double-edged sword of using simple physics model to understand the decay of a landfalling typhoon	Current Advances in Turbulence and multiphase flowS - 24CATS	Current Advances in Turbulence and multiphase flowS - 24CATS	2024

# Workshops and Seminars (Organized and Hosted by Faculty/Units)

Speaker Name(s)	Title	Location	Date
Yasushi Takeda	On Symmetry breaking in Taylor-Couette System	OIST	2024-07- 22
Michael D. Graham	Data, dynamics, and manifolds: machine learning approaches for modeling and controlling complex flows	OIST	2024-07- 04
Eckart Meiburg	Fluid Mechanics of the Dead Sea	OIST	2024-07- 02