| | **Toshiyuki Hibiya** | **JAPAN** |

Professor Toshiyuki Hibiya has conducted a wealth of excellent research on the physical mechanisms of deep ocean mixing through both theoretical predictions and observational verification. This information is essential for understanding the meridional overturning circulation that controls long-term climate change. In particular, the theoretical prediction of the latitudinal dependence of the mixing intensity in the deep ocean, the demonstration of this latitudinal dependence by large-scale observations, and the global mapping of the turbulence intensity in the middle and deep ocean layers are highly pioneering and original, and have strongly influenced the direction of subsequent research on turbulent mixing in the ocean interior. Furthermore, he significantly improved the existing parameterization of diapycnal mixing in the ocean interior (far-field mixing) and also presented a new parameterization of benthic mixing hotspots (near-field mixing) induced by local breaking of internal lee waves excited by strong tidal interaction with rough seafloor topography. The development of such formulated far-field and near-field mixing parameterizations has contributed significantly to the accurate modeling of the deep ocean circulation and consequently to the improvement of climate change predictions. He has also made significant contributions to the ocean science community by serving on numerous boards of ocean-related academic organizations, including as a member of the Executive Committee of IAPSO (2011-2019), President of the Ocean Sciences Division of the Asian and Oceania Geosciences Society (AOGS) (2012-2014), Representative of the Japan Geoscience Union (JpGU) (2012-present), and President of the Oceanographic Society of Japan (2015-2019).

Research Interests: Parameterization of diapycnal mixing processes in the deep ocean for next-generation global circulation models, Accurate modeling of the upper ocean response through improved parameterization of mixed layer dynamics, Dynamics of the Kuroshio meander.

University Degrees: B.S. (Geophysics), Department of Geophysics, Faculty of Science, University of Tokyo, 1980; M.S. (Physical Oceanography), Department of Geophysics, Graduate School of Science, University of Tokyo, 1982; Ph.D. (Physical Oceanography), Department of Geophysics, Graduate School of Science, University of Tokyo, 1985.

Professional Experience: Research Associate, Earthquake Research Institute, University of Tokyo (1987-1992); Postdoctoral Research Associate, Department of Oceanography, University of British Columbia, Canada (1989-1990); Postdoctoral Research Associate, Geophysics Program, University of Washington, U.S.A. (1990-1991); Associate Professor, Graduate School of Science, Hokkaido University (1992-1995); Associate Professor, Ocean Research Institute, University of Tokyo (1995-1998); Associate Professor, Graduate School of Science, University of Tokyo (1998-2000); Professor, Graduate School of Science, University of Tokyo (2000-2022); Professor Emeritus, University of Tokyo (2022-present); Visiting Principal Researcher, Japan Agency for Marine-Earth Science and Technology (JAMSTEC) (2022-present); Visiting Professor, Tokyo University of Marine Science and Technology (2022-present).

Academic Awards and Honors: The Okada Memorial Prize of the Oceanographic Society of Japan (1989), Research Fellowship in Natural Sciences of the Mitsubishi Foundation (2005, 2019), The Society Prize of the Oceanographic Society of Japan (2008), The Japanese-French Oceanographic Society Outstanding-Publication Award (2010), Distinguished Lecturer in the Ocean Sciences Section of the Asian Oceania Geosciences Society (AOGS) (2011), The Hidaka Outstanding-Publication Award of the Oceanographic Society of Japan (2013, 2014), The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, Awards for Science and Technology (2020), The 14th Prime Minister's Commendation for Merits in Promoting a Maritime Nation (2021), Elected Fellow of the IUGG (2023)

Service to IUGG/IAPSO: Member of the Organizing Committee of the 23rd IUGG General Assembly in Sapporo (Japan) (2003), Member of the Executive Committee of IAPSO (2011-2019), four times Lead-Convener and twice Co-Convener of IUGG/IAPSO Meetings from 2011 to 2023, Full Member of IAPSO/SCOR Working Group 121 "Deep-Ocean Mixing" (2002-2007), Full Member of IAPSO/SCOR Working Group 160 "ATOMIX" (2020-present).

Fellow (2023) of the International Union of Geodesy and Geophysics (IUGG)

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