

18 December 2025, Thursday

- 08.30-09.00 **Registration & Welcome Coffee**
09.00-09.15 **Opening & Welcome Address**
- Session 1: Data-Driven Modelling & Reviews / Chair: M. Atlar**
- 09.15-09.45 **Prof. Zaojian Zou** Keynote Address 1: Data-driven based identification modelling and prediction of ship maneuvering motion.
- 09.45-10.15 **Cihad Celik, Huanhuan Li, Lu Zou, Musa Bashir, Zaili Yang**: Data-Driven Modelling and Prediction of Ship Manoeuvring Motions with Dynamic Bayesian Networks
- 10.15-10.45 **Nadir Abbas, Li-Ying Hao, Jamshed Iqbal, Syed Awais Ali Shah**: A Review of Model Predictive Control and Reinforcement Learning Integration Framework for UAV-Based Offshore Inspection and Marine Monitoring
- 10.45-11.00 **Coffee Break**
- Session 2: Maneuvering & Risk Chair: Z. Zou**
- 11.00-11.30 **Won-Jun Yoo, Kwang-Jun Paik, Mu-Yeong Seo**: UKF-Enhanced Probabilistic Ship Domain for Real-Time Collision Risk and Damage Assessment
- 11.30-12.00 **Bas de Kruif, Bulent Duz, Victor Ferrari**: Man overboard manoeuvre in waves; controlling the Williamson turn
- 12.00-12.30 **Afşin Baran Bayezit, Roberto Tonelli, Victor Ferrari, Ömer Kemal Kınacı, Bülent Düz**: Limitations of Linear Manoeuvring Models at High Rudder Angles: A Case Study on Nomoto Models
- 12.30-13.30 **Lunch (Open Buffet)**

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- Session 3: Autonomy & Planning Chair: S. Turnock**
- 13.30-14.00 **Prof. Stephen Turnock** Keynote Address 2: Will large ships ever be fully uncrewed?
- 14.00-14.30 **Ahmet Gunes**, Real-Time Penetration Path-planning for AUVs Using Deep Reinforcement Learning
- 14.30-15.00 **Ozan Kaya, Şeniz Ertuğrul, Ege Yarenci**: A Generic Algorithm for Target Following with Dynamic Obstacle Avoidance in Unstructured Environments
- 15.00-15.30 **Cansel Yalçinkaya, Ebru Koçdor, Efe Gürz Çakıroğlu**: Enhancing Mission Autonomy of Autonomous Surface Vehicles in Time-Critical Naval Operations
- 15.30-16.00 **Coffee Break**
- Session 4: Autonomy & Control Chair: J. Chung**
- 16.00-16.30 **Gökhan Tansel Tayyar, Ferhan Büyükçolak**: Curvature-Based Vessel Motion Modeling: A Kinematic Approach for Path Planning and Predictive
- 16.30-17.00 **Anıl Aslan, Ömer Kemal Kınacı**: Improved Feedforward Speed Controller for Autonomous Underwater Vehicles
- 17.00-17.30 **Dong Ho Yoon, Joonmo Chung, Hyeongsu Lee, Hojin Yoon, Moonju Jeong, Seojun Oh, Jihye Byeon, Tri Hoang Nguyen**: Autonomous Seagoing Simulations of an Icebreaker in Ice-Prone Area Considering Fully Coupled Ship Hydrodynamics Using HydroQus
- 17.30-18.30 **Technical Tour**
- 19.00 **Gala Dinner**

19 December 2025, Friday

- 08.30-09.00 **Welcome Coffee**
- Session 5: Hydrodynamics & Simulation Chair: T. Tezdoğan**
- 09.00-09.30 **Prof. Tahsin Tezdogan** Keynote Address 3: Towards Reliable Autonomous Navigation: CFD Insights into Path-Following in Waves.
- 09.30-10.00 **Fatih Mehmet Kale, Mesut Taner, Naz Yılmaz, Kadri Turgut Gürsel**: Free Surface Effects on the Hydrodynamic Efficiency of a Bio-Inspired Underwater Vehicle
- 10.00-10.30 **Oğuzhan Kirikbaş, Şakir Bal**: Calculation of the maneuvering derivatives of a generic SSK class submarine with CFD
- 10.30-11.00 **Coffee Break**
- Session 6: Operations, Training & Impact /Chair: Z. Yang**
- 11.00-11.30 **Bilal Metin Altınöz, Yusuf Kaya, Samet Nazmi Şahin**: Technical Difficulties and Approaches to Solutions in the Development and Operation of Unmanned Surface Vehicles (USVs)
- 11.30-12.00 **Çağlar Karatuğ, Eddie Blanco-Davis, Xinjian Wang, Onur Yüksel, Yasin Arslanoğlu, Jin Wang**: Evaluating the Impacts of Emerging Smart Technologies on Maritime Education and Training
- 12.00-12.30 **Nikhil Raja, Stephen Turnock**: Modelling the Impact of Autonomous Marine Vehicles on Underwater Cable Operations
- 12.30-14.00 **Lunch**

19 December 2025 - Continued

Session 7: Digital Twins & Smart Methods / Chair: Z. Yang

- 14.00-14.30 **Ceren Nisanur Özbilge, Hikmet Dinçer:** Digital Twins in Naval and Unmanned Maritime Systems: Operational Potentials and Gaps
- 14.30-15.00 **Huanhuan Li, Jincheng Gong, Alan J. Murphy, Zaili Yang:** Applications of Ship Digital Twins in Maritime Transport: A systematic review

15.00-15.30 Coffee Break

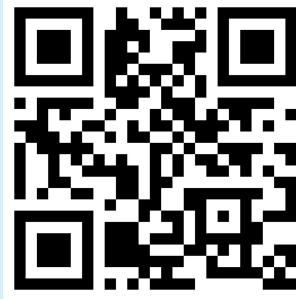
Session 8: Localization & Sensing Chair: Ş. Ertuğrul

- 15.30-16.00 **Bilal Metin Altınöz, Yusuf Kaya, Samet Nazmi Şahin:** Multi-Sensor Fusion-Based Localization and Mission Continuity for Autonomous Marine Platforms in GPS-Denied Environments
- 16.00-16.30 **Bilal Metin Altınöz, Yusuf Kaya, Samet Nazmi Şahin:** Real-Time Depth Regulation of Tethered Sensors in Unmanned Marine Systems
- 16.30-17.00 **Bilal Metin Altınöz, Yusuf Kaya, Samet Nazmi Şahin:** Sensor Placement and Field of View Optimization in Autonomous Marine Platforms
- 17.00 **Adjourn**

CONTACT INFORMATION

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Proceedings



VENUE

Colloquium will be held on 18 – 19 December 2025 at Istanbul Technical University (ITU), Suleyman Demirel Cultural Center, Ayazağa Campus, Maslak/Istanbul.



A. Yücel ODABAŞI Colloquium Series

5th International Meeting

Advances in Marine Robotics and Autonomous Systems

18-19 December 2025

Istanbul Technical University
Faculty of Naval Architecture and Ocean Engineering



Final Programme