



17th International Ship Stability Workshop

Helsinki, Finland 10-12 June 2019

May 31st 2019

Program

The 17th International Ship Stability Workshop, ISSW 2019, will be held in Helsinki, Finland 10th - 12th June 2019. The event is organized by NAPA and Aalto University. The venue is HTC Helsinki, Pinta building, Tammasaarenkatu 3, <https://htchelsinki.fi/en/>

ISSW and STAB (International Conference on Stability of Ships and Ocean Vehicles) are the most representative professional meetings in the fields of ship stability and safety, attracting international top researches and representatives of shipping companies, shipyards, classification societies, maritime authorities and other stakeholders.

The workshop entails in-depth discussions in an informal manner, resulting in an ideal environment for participants who are interested in current research and development.

Sunday June 9th

19:00 – 22:00 Welcome reception, Restaurant Faro, Kellosaarenranta 2
<http://www.faroravintola.fi>

Sponsored by Meyer Turku

Monday June 10th

8:00 – 8:30 Registration

8:30 – 8:45 **Welcome & opening of the workshop**

Local Organizing Committee, NAPA, Aalto University &
STAB International Standing Committee

8:45 – 10:00 **Introduction & 80 years of Rahola criterion**
(Chaired by Alberto Francescutto & Pekka Ruponen)

Documentary analysis of STAB and ISSW proceedings
by H. Dartois, P. Creismeas & J-F. Leguen

Alternative stability criteria for ships
by L. Kobylinski

Rahola criterion revisited: an overview of Jaakko Rahola's research and career
by P. Ruponen

Rahola criterion and the development of Intact Stability Code
by A. Francescutto

10:00 – 10:30 Coffee break



- 10:30 – 12:30 **Stochastic rolling and big data**
(Chaired by Vadim Belenky & Igor Bačkalov)
- Can the generalized Pareto Distribution be useful towards developing ship stability criteria?
by P.A. Anastopoulos & K. Spyrou
- A perspective on theoretical estimation of stochastic nonlinear rolling
by A. Maki, Y. Maruyama, N. Umeda, Y. Miino, T. Katayama, M. Sakai & T. Ueta
- Review of probabilistic methods for dynamic stability of ships in rough seas
by C. Wandji
- Computational fluids dynamic predication of hydrodynamic derivatives for manoeuvring models of fully appended ship
by S. Aram & K. Silva
- Time domain realization of extreme responses of a bilinear oscillator
by W. Xu & K. Maki
- 12:30 – 13:30 Lunch break
- 13:30 – 15:00 **Intact stability criteria and operational matters**
(Chaired by Naoya Umeda & Teemu Manderbacka)
- On regulatory consistency of criteria for dead ship condition and pure loss of stability
by W.S. Peters & V. Belenky
- Surf-riding failure mode: from IMO criterion to direct assessment procedure and application on Systematic Series D
by M. Acanfora, E. Begovic & B. Rinauro
- Wave radar application to the simplified parametric roll operational guidance at actual sea
by T. Yano, N. Umeda, K. Hirayama, M. Baba & M. Sakai
- On the uncertainties of the weather routing and support system against dangerous conditions
by T. Manderbacka
- 15:00 – 15:30 Coffee break
- 15:30 – 17:30 **Direct assessment methods**
(Chaired by William Peters & Dimitris Konovessis)
- Pure loss of stability in stern quartering waves: revisited with numerical simulations reproducing accidents
by N. Umeda, M. Osugi, Y. Ikenaga, A. Maki & A. Matsuda
- On parametric roll predictions
by G. Kapsenberg, B. Abeil, S. Kim, C. Wandji, E. Ruth & A. Pages
- Direct counting method and its validation
by V. Shigunov
- Model experiments and direct stability assessments on pure loss of stability of the ONR tumblehome in following seas
by J. Lu & M. Gu



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Envelope Peaks Over Threshold (EPOT) application and verification
by K. Weems, V. Belenky, B. Campbell, V. Pipiras & T. Sapsis

On extending multifidelity uncertainty quantification methods from non-rare to rare problems
by B. Brown & V. Pipiras

17:30 – 20:00 Meetings of the International Standing Committee and the Stability Research and Development Committee (*for the committee members only*)

20:00 – 22:00 Committee dinner (*for the committee members only*), sponsored by Elomatic

Tuesday June 11th

8:30 – 10:00 **Small craft and wave impact loads**
(Chaired by Frans van Walree & Jerzy Matusiak)

On the application of change detection techniques for the stability monitoring of fishing vessels
by L. Santiago Caamaño, M. Miguez González, R. Galeazzi, U.D. Nielsen & V. Díaz Casás

Fatal stability loss of a small craft on a wave crest – based on a real safety investigation
by R. Haimila, T. Salmenhaara & J. Matusiak

Impulsive loads on and water ingress in a landing craft: model tests and simulations
by F. van Walree & D. Sgaroto

10:00 – 10:30 Coffee break

10:30 – 12:30 **Damage stability I** (Chaired by Hendrik Bruhns & Jakub Cichowicz)

SOLAS 2020, effects of the new 'R' value for the design of very small passenger ships
by S.L. van der Voort, M.K.S. Krol & F.M. de Wit

GM limiting curve for operation in brackish water
by P. Pennanen, D. Lindroth & P. Ruponen

Ro-Ro passenger ships - from Stockholm Agreement to SOLAS 2020
by J. Cichowicz, O. Olufsen & D. Vassalos

Study on the damaged ship motion coupled with damaged flow based on the unified viscous/potential prediction model
by S. Bu & M. Gu

12:30 – 13:30 Lunch break

13:30 – 14:30 **Damage stability II** (Chaired by Hendrik Bruhns & Jakub Cichowicz)

Modelling of compartment connectivity and probabilistic assessment of progressive flooding stages for a damaged ship
by K.B. Karoliuss, J. Cichowicz & D. Vassalos

Ship stability-related effects on a critical distance of collision evasive action
by M. Gil, J. Montewka, P. Krata & T. Hinz

14:30 – 14:45 Group photo



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- 16:30 Departure for the evening program (Tammasaarenlaituri, close to the workshop venue), note that the boat departs at 17:00.
Boat tour around Helsinki, drinks sponsored by Foreship
- 19:00 – 22:00 Workshop dinner at restaurant Särkänlinna,
<https://www.ravintolasarkanlinna.fi/en/>
Sponsored by NAPA
- 22:00 - Bus transportation to hotel(s)

Wednesday June 12th

- 8:30 – 10:00 **Presentation and discussion of outcomes from eSAFE**
enhanced Stability After a Flooding Event - A joint industry project on Damage Stability for Cruise Ships
(Chaired by Dracos Vassalos & Gabriele Bulian)

Introductory presentation of eSAFE project (presentation only)
by H. Luhmann

Permeability of tanks intended for liquids in cruise vessels
by M. Cardinale, R. Bertin, H. Luhmann & A-L. Routi

Considering collision, bottom grounding and side grounding/contact in a common non-zonal framework
by G. Bulian, M. Cardinale, G. Dafermos, E. Eliopoulou, A. Francescutto, R. Hamann, D. Lindroth, H. Luhmann, P. Ruponen & G. Zaraphonitis

CFD in damage stability
by E. Ruth, O. Olufsen & O. Rognebakke

eSAFE - cruise ship survivability in waves
by G. Atzamos, D. Vassalos, J. Cichowicz, D. Paterson & E. Boulougouris
- 10:00 – 10:30 Coffee break
- 10:30 – 12:30 **Roll damping**
(Chaired by Luis Pérez-Rojas & Toru Katayama)

A pragmatic approach to roll damping
by J. Cichowicz & D. Vassalos

Curve fit estimate of roll damping for high damping cases
by T. Smith

A step forward towards developing an uncertainty analysis procedure for roll decay tests
by A. Oliva-Remola & L. Pérez-Rojas

Analyse on several crucial factors for CFD simulation of roll damping
by M. Gu, S. Bu & K. Zeng

Study on short-term prediction of roll in beam sea
by T. Katayama, M. Kankaku, A. Maki, K. Sugimoto & Y. Fukumoto
- 12:30 – 13:15 Lunch break

13:15 – 14:25 **The future of stability assessment** (Chaired by Kostas Spyrou)

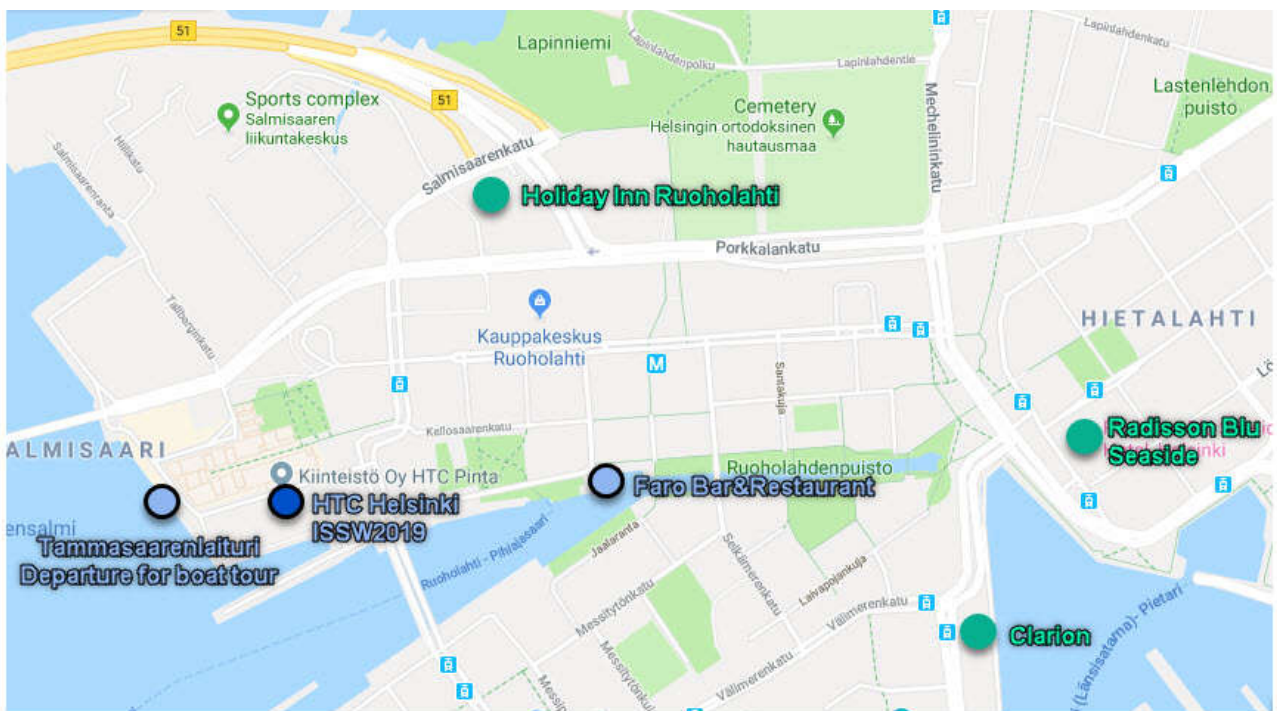
Interpretation of results of numerical simulation
by A. Reed

Verification of damage ship survivability using computational fluid dynamics
by A. Niotis, D. Vassalos, E. Boulougouris, J. Cichowicz & G. Atzamos

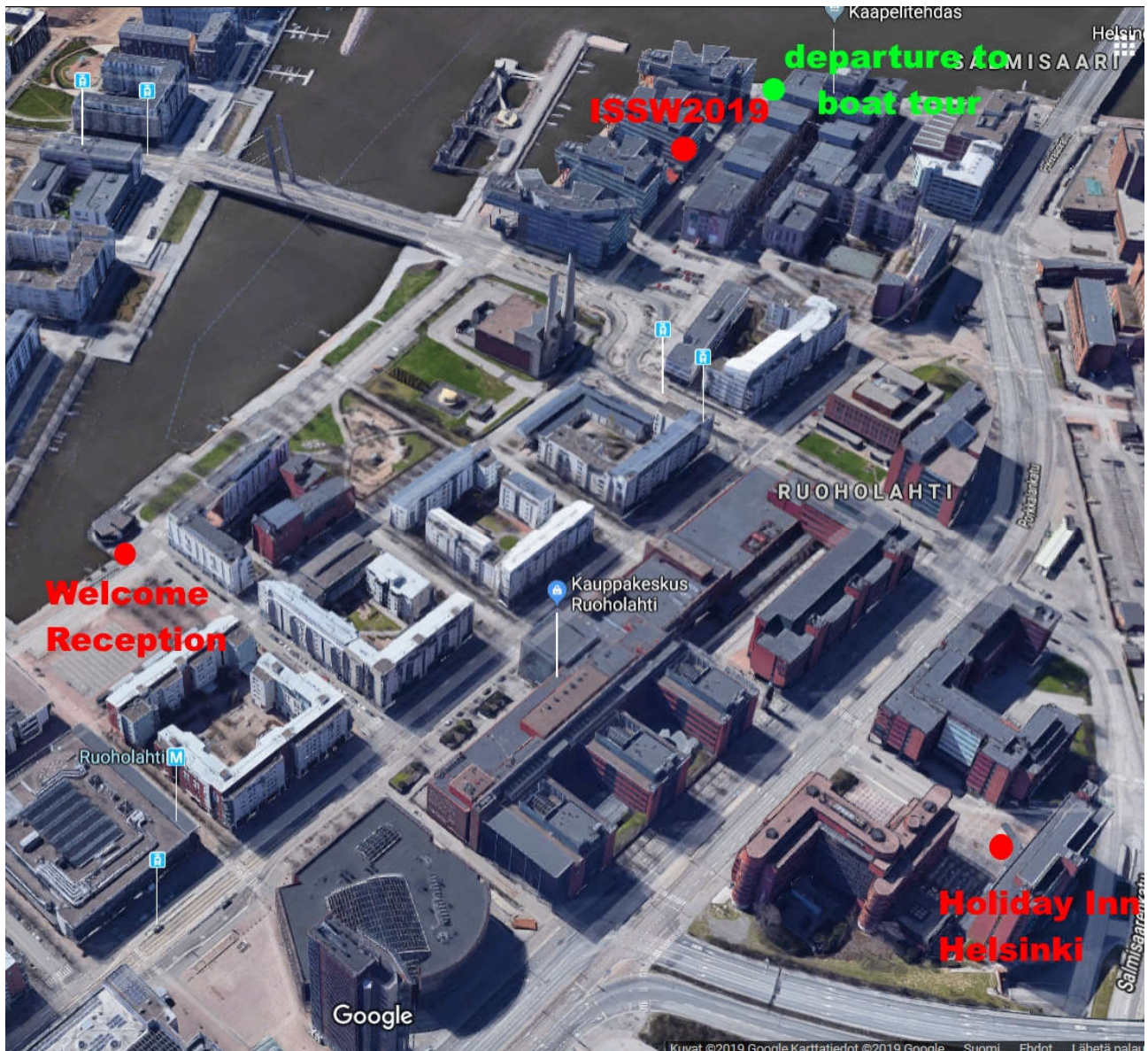
Intact stability of passenger ships: safety issue or design concern? Neither!
by D. Vassalos, G. Atzamos, D. Paterson, J. Cichowicz, K.B. Karoliuss, E. Boulougouris & D. Konovessis

14:25 – 14:30 Closure

Map



- Venue: HTC Helsinki Tammasaarenkatu 3 (HTC Pinta building)
- Welcome reception: Restaurant Faro, Kellosaarenranta 2
- Departure for boat tour: Tammasaarenlaituri (close to workshop venue)
- Hotel Holiday Inn Ruoholahti: Sulhasenkuja 3
- Hotel Radisson Blu Seaside: Ruoholahdenranta 3
- Hotel Clarion Helsinki: Tyynenmerenkatu 2



Transportation

For instructions on taxi to/from the airport see:

<https://www.finavia.fi/en/airports/helsinki-airport/access/taxis>

Note! Agree the price beforehand. Recommended taxi companies are “Taksi Helsinki”, “Lähitaksi” & “Helsinki Airport Taxi”.

Taksi Helsinki: +358 100 0700

Lähitaksi: +358 100 7300

For public transportation, see: <https://www.hsl.fi/en>

Detailed instructions on train connection from/to airport to city centre:

<https://www.hsl.fi/en/timetables-and-routes/terminals/transport-links-helsinki-airport>



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Connection from Helsinki city centre to Ruoholahti area via Metro (direction west Matinkylä/Tapiola from the central railway station or Kamppi).

Public transportation tickets (bought in advance):

- from/to the airport: **zone = ABC**
- from city centre from/to Ruoholahti: **zone = AB**

More information about Helsinki can be found at: <https://www.myhelsinki.fi/en>

Contact

For further details, please contact: [issw2019\(a\)napa.fi](mailto:issw2019(a)napa.fi)

During the workshop you can call **+358 40 373 73 95** for assistance.

The 17th International Ship Stability Workshop is arranged by NAPA and Aalto University



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