



C-XIII **Fatigue of Welded Components and Structures**

Draft Agenda, Annual Assembly 2025

XIII-3113-2025-R1

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Comments: The meetings will start on Sunday 22.06.2025 in Sala Levante.
From Monday 23.06.2025 on, the meetings will be held in Sala Maestrale.
Meetings to be held in person only, not hybrid
Members are asked to review all documents prior to the meeting
The presenters should keep the time management in mind due to the intensive.
Presentations are to be prepared based on the 10+5 model. 10 min. presentation and 5 min. discussion.

Delegation of Germany
XIII-3113-2025-R1

Commission XIII - Fatigue of welded components and structures **Draft Agenda for the 78th IIW Annual Assembly 2025** **22nd – 27th June 2025, Genoa, Italy**

Centro Congressi
Porto Antico di Genova
Via Magazzini del Cotone
16128 Genova • Italy

Overview of C-XIII Meetings

Note: The schedule time is according to the local time in Genoa, Italy.

Sunday, 22 nd June	Monday, 23 rd June	Tuesday, 24 th June	Wednesday, 25 th June
C-XIII Subcommission meetings	C-XIII main Commission meetings	C-XIII main Commission meetings	C-XIII main Commission meetings
Sala Levante 08:30 – 17:30	Sala Maestrale 08:30 -18:00	Sala Maestrale 08:30 -18:00	Sala Maestrale 08:30 -18:00

COMMISSION XIII SUBCOMMISSION MEETINGS

Sunday, 22nd June

08:30 – 17:30

Sala Levante

Day 1

COMMISSION XIII	Chair	Time
Welcome Agenda Minutes C-XIII Title: Fatigue of Welded and Additively Manufactured Components and Structures Commission business: AM and AI	Majid Farajian	08:30-09:00
SC-C Stress Analysis	Jörg Baumgartner	09:00-09:45
JWG XIII/XV Fatigue Design Rules	Jörg Baumgartner/Adolf Hobbacher	09:45-10:15
Break		10:15-10:45
SC-F Residual Stress effects in fatigue	Jonas Hensel	10:45-11:45
SC-E Maintenance of Welded Structures	Takeshi Hanji	11:45-12:30
Lunch Break		12:30-14:00
SC-D Effects of weld imperfections on fatigue strength	Heikki Remes	14:00-15:00
SC-A Fatigue Testing and Evaluation for Design	Fabien Lefebvre	15:00-15:45
Coffee/Tea Break		15:45-16:15
SC-B Fatigue improvement techniques	Majid Farajian	16:15-17:15
Any other business		17:15-17:30
End of the day 1		17:30

MAIN COMMISSION XIII MEETINGS

Monday, 23rd June

Sala Maestrale

Day 2

08:30 – 12:30

Main topic: Stress Analysis (SC-C)			
Welcome Agenda, opening remarks C-XIII Title: Fatigue of Welded and Additively Manufactured Components and Structures Commission business: AM and AI			08:30-08:45
XIII-3171-2025-P	Weld Integrity and Fatigue Performance in Wind Energy Steel Support Structures	Elyas Ghafoori	08:45-09:15
XIII-3126-2025	Fatigue assessment of welded component like specimens at 300 °C under variable amplitude loading considering multiaxiality with strain- and energy-based fatigue damage parameters	Georg Veile et al	09:15-09:30
XIII-3168-2025	Unifying multiaxial fatigue life prediction of welded joints by considering support effects	Niklas M. Bauer et al	09:30-09:45
XIII-3127-2025	High-cycle rotating bending fatigue test of notched specimens to enhance N-SIF based fatigue assessment approaches	Andrea Vacante et al	09:45-10:00
Commission business			10:00-10:15
Buffer Time			10:15-10:45
Coffee/Tea break			10:15-10:45
Main topic: Stress Analysis (SC-C)			
XIII-3166-2025	Fatigue assessment of welded very thin steels sheets made from 1.4404	Jörg Baumgartner et al	10:45-11:00
XIII-3152-2025	Fatigue assessment of welded thin-walled automotive steels using effective stress methods	Antti Ahola et al	11:00-11:15
XIII-3138-2025	Experimental and numerical investigations on the mean stress effect on the fatigue of thin-walled tubular joints	Maximilian Kling et al	11:15-11:30
XIII-3130-2025	Structural simulation of 3D-scanned weld seam geometries for the prediction of fatigue life	Julius Lotz et al	11:30-11:45
XIII-3176-2025	Hot-Spot Stress Fatigue Strength Curves for Weld Toe on Plate Edges	Takeshi HANJI et al	11:45-12:00
XIII-3179-2025	Empirical study on the definition of structural hot spot stress	Norio Yamamoto	12:00-12:15
Commission business			12:15-12:30
Buffer Time			12:30-14:00
Lunch break			12:30-14:00

MAIN COMMISSION XIII MEETINGS**Monday, 23rd June****14:00 – 18:00****Sala Maestrale****Day 2**

Main topic: Stress Analysis (SC-C)			
Commission business			14:00-14:15
XIII-3151-2025	Numerical analysis of high-cycle fatigue tested T-joints using local approaches	Sascha Küster et al	14:15-14:30
XIII-3132-2025	Analytical Validation of SCF Formulas for Joint Misalignments in Fatigue Design Rules of the Coast Guard and Navy	Tara Larkin et al	14:30-14:45
XIII-3139-2025	Influence of mean stress on the fatigue of welded tubular structures under uniaxial fatigue loading	Maximilian Kling et al	14:45-15:00
XIII-3128-2025	A Fatigue Crack Growth Study on Partial Penetration and Fillet Welds	Marco Palombo	15:00-15:15
XIII-3172-2025	Wire-arc DED for strengthening damaged structures: an investigation into residual stress engineering	Hessam Moshayedi	15:15-15:30
Commission business			15:30-15:45
Buffer Time			15:45-16:15
Coffee/Tea break			15:45-16:15
Main topic: A Fatigue Testing and Evaluation for Design (SC-A)			
XIII-3183-2025	Fatigue design guidance and S-N curves for butt-welds in thick steel sections	Kenneth A. Macdonald et al	16:15-16:30
XIII-3165-2025	Prediction accuracy of transfer learning-based fatigue strength predictions for butt joints fabricated using varying fusion welding techniques	Marten Beiler et al	16:30-16:45
XIII-3145-2025	A re-analysis of Fatigue Crack Growth Rate Data for Steels	Matthew J Doré et al	16:45-17:00
XIII-3160-2025	Comparison of fatigue strength of reduced and full thickness welded specimens for offshore application	Philippe Thibaux et al	17:00-17:15
XIII-3143-2025	Fatigue Behaviour of Welded Steel in Hydrogen and Air Environments: A Fracture Mechanics Approach	Faisal Karim et al	17:15-17:30

XIII-3167-2025	Static and fatigue strength of laser-beam welded aluminium-steel overlap joints	Tim Korschinsky	17:30-17:45
Commission business			17:45-18:00
Buffer Time			18:00
End of the day 2			18:00

MAIN COMMISSION XIII MEETINGS

Tuesday, 24th June

Sala Maestrale

Day 3

08:30 – 12:30

Main topic: Fatigue improvement techniques (SC-B)			
Commission business			08:30-08:45
XIII-3164-2025	Impact of post-weld treatments on the fatigue strength of 5083 aluminum transversal attachment joints	Juho Havia	08:45-09:00
XIII-3147-2025	Investigation on crack initiation and crack propagation behaviour of HFMI-treated longitudinal stiffeners under variable amplitude loading using infrared thermography	Lea Wendler	09:00-09:15
XIII-3163-2025	Fatigue strength improvement of circular hollow section tube-to-gusset plate detail with welding techniques	Kalle Lipiäinen	09:15-09:30
XIII-3131-2025	Experimental investigation on the effects of laser treatments and blast cleaning on the fatigue strength of S355J2+N K-butt welds	Gyde Andresen-Paulsen	09:30-09:45
XIII-3129-2025	Optimization of Welded Joints in Offshore Jacket Structures	Tim Brömer	09:45-10:00
Commission business			10:00-10:15
Buffer Time			10:15-10:45
Coffee/Tea break			10:15-10:45
Main topic: Fatigue improvement techniques (SC-B)			
Presentation Henry Granjon Prize			10:45-11:00
Category C: Design and Structural Integrity			
XIII-3169-2025	Corrosion protection and fatigue performance of HFMI-treated welded joints in offshore wind turbine structures	Daniel Löschner	11:00-11:15
XIII-3146-2025	Comparison of different fatigue assessment methods for HFMI-treated longitudinal stiffeners under variable amplitude loading	Lea Wendler	11:15-11:30
XIII-3181-2025	Local MIL-HDBK-5D equivalent stress-based fatigue assessment of the heavy-thick T-joint improved by Portable Pneumatic Needle-Peening treatment	Xipeng Chen	11:30-11:45

Commission business Round Robin Test Buffer Time	11:45- 12:30
Lunch break	12:30- 14:00

MAIN COMMISSION XIII MEETINGS

Tuesday, 24th June

14:00 – 18:00

Sala Maestrale

Day 3

Main topic: Residual Stress effects in fatigue (SC-F)			
Commission business New title of the Subcommission F: Advanced Manufacturing			14:00- 14:15
XIII-3134-2025	Effect of shot peening on fatigue strength of DED-arc high strength steel specimens with unmilled surfaces	Jonas Hensel	14:15- 14:30
XIII-3136-2025	Influence of build-up height on residual stresses in additive repair and modification of multi-material composites using DED-Arc	Ronny Scharf-Wildenhain	14:30- 14:45
XIII-3135-2025	Structured Approach towards Surface Feature Classification on DED-printed parts	Jonny Kaars	14:45- 15:00
XIII-3133-2025	Fatigue properties of DED-arc manufactured aluminum under consideration of surface waviness according to nominal stress concept	Markus Köhler	15:00 15:15
XIII-3137-2025	Anisotropic characterization of wire-arc additive manufacturing Ti-5Al-2Sn-2Zr-4Mo-4Cr alloy: Influence of texture and microstructure	Banglong Yu	15:15- 15:30
Commission business Buffer Time			15:30- 15:45
Coffee/Tea break			15:45- 16:15
Main topic: Residual Stress effects in fatigue (SC-F)			
XIII-3174-2025	Fatigue Assessment of DED-Arc Structures Using Local Approaches Considering Surface Topography	Jan Schubnell	16:15- 16:30

XIII-3175-2025	Residual stress analysis in wire arc additive manufactured AM90 low alloy steel single-walls	Ardeshir Sarmast	16:30-16:45
XIII-3148-2025	Fatigue performance of high-strength low-alloy DED-Arc components with low-pressure cold spray coating	Marc Muggenburg	16:45-17:00
XIII-3140-2025	Fatigue assessment of duplex stainless steel processed by laser-based metal additive manufacturing: The role of nanosized precipitate and fatigue crack path	Masoud Moshtaghi	17:00-17:15
XIII-3141-2025	Influence of Nano-Chemistry Changes on Fatigue Crack Growth Rate in Hybrid Laser-MAG and MAG Welded API 5L X65 Steel in Air and Hydrogen	Mahdieh Safyari	17:15-17:30
XIII-3170-2025	Fatigue Behavior Assessment of AA2219 TIG Butt Joints Considering Weld Reinforcement Geometry and Residual Stresses Measurements	Sviatoslav Motrunich	17:30-17:45
Commission business			17:45-
Buffer Time			18:00
End of the day 3			18:00

MAIN COMMISSION XIII MEETINGS**Wednesday, 25th June****08:30 – 12:30****Sala Maestrale****Day 4**

Main topic: Effects of weld imperfections on fatigue strength (SC-D)			
Commission business			08:30-08:45
XIII-3153-2025	Best Practice Guideline for Digital Visual Testing (D-VT) – Part 1: Identification of Local Geometrical Parameters of Welded Joints	Moritz Braun et al	08:45-09:00
XIII-3182-2025	Thinness and quality effects on fatigue strength of transverse non-load-carrying welded attachments	Mehdi Ghanadi et al	09:00-09:15
XIII-3158-2025	Stress concentration factor modelling based on weld geometry data collection for fatigue design and weld quality control	Xavier Hermite et al	09:15-09:30
XIII-3154-2025	Modelling of surface integrity effect on fatigue behavior of cut-plate edges in high-strength steels	Yuki Ono et al	09:30-09:45
XIII-3155-2025	Quantifying the severity of local undercut on fatigue	Abinab Niraula et al	09:45-10:00
Commission business			10:00-10:15
Buffer Time			10:15-10:45
Coffee/Tea break			10:15-10:45
XIII-3173-2025	Relationship Between Fatigue Performance and Weld Quality of Fillet Welds with Start-Stop Positions	Jan Schubnell et al	10:45-11:00
XIII-3161-2025	Investigation of fatigue performance in high-strength steels with defined post-processed thermal cut edges	Jan-Hendrik Grimm et al	11:00-11:15
XIII-3156-2025	Critical factors influencing fatigue behaviour of high-strength dissimilar welded joints with thickness steps	Muhammad S. Tariq et al	11:15-11:30
XIII-3149-2025	Influence of surface topology on fatigue of DED-Arc components: A NURBS-based 3D-FEA approach	Stefan Vogts et al	11:30-11:45
XIII-3144-2025	Analysis of high-cycle fatigue behavior for inherently defective butt joints using strain energy density method	Ping Wang	11:45-12:00
XIII-3159-2025	Fatigue Assessment Method and Experimental Study of Tubular Joints in Offshore Platform Structures	Yongkang Zheng et al	12:00-12:15
Commission business			12:15-12:30
Buffer Time			12:15-12:30

Lunch break	12:30- 14:00
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MAIN COMMISSION XIII MEETINGS**Wednesday, 25th June****14:00 – 18:00****Sala Maestrale****Day 4**

Main topic: SC-E Maintenance of Welded Structures (SC-E)			
XIII-3184-2025	Long Term Follow-up Study on Retrofitting Works for Vibration Fatigue in High-Speed Railway Bridges	Chitoshi Miki	14:00- 14:15
XIII-3177-2025	Practical implementation of impact crack closure retrofit (ICR) treatment for fatigue cracks initiated from the trough rib-to-deck welding joints propagating to trough ribs of orthotropic steel decks	Koji Kinoshita	14:15- 14:30
XIII-3162-2025	Fatigue Performance of New and Repaired HFMI-Treated Welds in High-Strength Steels under 4-Point Bending	Miloslav Kepka Jr.	14:30- 14:45
XIII-3178-2025	Fatigue Crack Propagation and Repair using Crack-Arrest Holes in Trough Girder Railway Bridges	Miki SHIBATA	14:45- 15:00
XIII-3185-2025	Non-Proportional Fatigue Stress Criteria in Welded Joints: A Design Code Perspective	Nanna Winther	15:00 15:15
XIII-3180-2025	2025 REPORT OF WORK IN PROGRESS (WIP) ON FATIGUE STRENGTH OF WELDED JOINTS IN JAPAN	Takeshi Hanji	15:15- 15:30
Commission business			15:30-
Buffer Time			15:45
Coffee/Tea break			15:45- 16:15
Commission business			16:15-
Papers recommendation			18:00
Concluding			
Future activities			
Integration of AI in C-XIII			
End of the day 4			18:00