

IHHA WCRR

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK
COLORADO SPRINGS, CO USA | NOVEMBER 17-21, 2025

14TH WORLD CONGRESS ON RAILWAY RESEARCH

CALL FOR PAPERS

Inspiring Innovative and Resilient Railways



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WELCOME

MxV Rail is delighted to announce the **14th World Congress on Railway Research – WCRR 2025, will be held 17-21 November** in Colorado Springs, USA.

The 2025 WCRR Congress theme is ***Inspiring innovative and resilient railways***

WCRR is the world's largest international congress on railway research providing the best forum for the gathering of researchers, technical experts and industry leaders championing innovation.

Building on its unparalleled opportunities for networking, knowledge sharing, and discussing the latest and most promising advancements across the global railway community, the WCRR 2025 will be co-located with the **13th International Heavy Haul Association (IHHA) Conference** to offer a historic coming together of leading rail industry experts across the globe.

This unique joint-conference experience will be celebrated under the event banner **Rail Research Week**.

CALL FOR PAPERS

The Organizing Committee for the WCRR 2025 are calling for papers to address the theme:

Inspiring innovative and resilient railways





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SESSION TOPICS AND SUBTOPICS




WCRR 2025 will be structured around seven session topics that demonstrate how research is delivering benefit against key railway objectives, covering a full range of beneficiaries, from individual users to society as a whole.

During the online abstract submission process, you will be asked to select the primary topic/subtopic which your research relates to best. Because some topics can naturally fit in multiple categories, optional second and third choice of topic/subtopic will also be available.

TOPICS	SUBTOPICS
 <p>INSPIRING THE FUTURE OF RAIL TRANSPORT</p>	<ol style="list-style-type: none"> 1.1. Emerging technologies in moving people and goods 1.2. Advancements in operations and train control technologies 1.3. Alternative energy sources and storage (battery, hydrogen, etc) 1.4. Alternative guidance and propulsion (maglev, hyperloop, etc) 1.5. Advancements in signaling, communications, and train detection technologies 1.6. Application of Artificial Intelligence (AI) in the railway sector 1.7. Advanced manufacturing methods (3D printing, etc) 1.8. Digital twin 1.9. Workforce development 1.10. International collaboration 1.11. Public-private partnership
 <p>ATTRACTIVE, GREEN, AND SUSTAINABLE RAILWAYS</p>	<ol style="list-style-type: none"> 2.1. Shift from other transportation modes to rail 2.2. Attracting more customers 2.3. Improved customer experience 2.4. Electronic shift (paperless processes, electronic ticketing, etc) 2.5. Energy efficiency 2.6. Railway contribution to green transformation (reduced carbon footprint, etc) 2.7. Reduction of waste and pollution 2.8. Optimizing train scheduling, capacity, and operations 2.9. Door-to-door connectivity for passengers and freight 2.10. Noise/vibration countermeasures, aerodynamics 2.11. Diverse and engaged workforce 2.12. Investment and economic efficiency





SESSION TOPICS AND SUBTOPICS

TOPICS	SUBTOPICS
 <p>RESILIENT, RELIABLE, AND INTELLIGENT RAILWAYS</p>	<ul style="list-style-type: none"> 3.1. Disruption management and response planning 3.2. Understanding and mitigating climate change impacts 3.3. Understanding and mitigating extreme weather events 3.4. Risk assessment and management 3.5. Advanced condition monitoring systems and technology 3.6. Service quality, reliability, on-time performance 3.7. Human factors
 <p>SAFETY AND SECURITY</p>	<ul style="list-style-type: none"> 4.1. Safety assessment/evaluation 4.2. Security, including cyber security 4.3. Grade crossings / level crossings 4.4. Trespasser issues 4.5. Train operation safety, driver and crew, human factors 4.6. Maintaining a safe environment for workers 4.7. Derailment/capsizing and collision 4.8. Bio safety and security
 <p>RELIABLE AND EASY TO MAINTAIN MOVING ASSETS</p>	<ul style="list-style-type: none"> 5.1. Rolling stock design for passenger rail 5.2. Rolling stock design for freight rail 5.3. Rolling stock components/subsystems 5.4. Braking performance 5.5. Rolling stock maintenance 5.6. Condition-based maintenance, condition monitoring, inspection and detection, including data and predictive analytics 5.7. Asset management for rolling stock 5.8. Lightweight vehicles 5.9. High-speed rolling stock



SESSION TOPICS AND SUBTOPICS

TOPICS	SUBTOPICS
 <p>RELIABLE AND EASY TO MAINTAIN FIXED ASSETS</p>	<ul style="list-style-type: none"> 6.1. Construction and restoration of new lines 6.2. Structures (bridges, tunnels, stations) 6.3. Materials and track components 6.4. Rail/track/infrastructure design 6.5. Rail/track/infrastructure maintenance 6.6. Condition-based maintenance, condition monitoring, inspection and detection, unmanned aerial vehicle technology in maintenance, including data and predictive analytics 6.7. Asset management for infrastructure 6.8. Electric power/catenary facilities 6.9. Signaling and communication systems
 <p>RELIABLE AND EASY TO MAINTAIN ASSET AND SYSTEM INTERFACES</p>	<ul style="list-style-type: none"> 7.1. Rail/wheel (vehicle-track) interaction 7.2. Rolling stock/pantograph-catenary interaction 7.3. Train marshalling 7.4. Car coupling (including Digital Automatic Coupling DAC) 7.5. Electromagnetic compatibility 7.6. Standards and technical regulation development 7.7. Test, homologation, and cross-acceptance 7.8. Global certification for innovative product development 7.9. The role of rail in an origin-to-destination transportation network



ABSTRACT SUBMISSION PROCESS

Abstracts must be submitted using the **WCRR 2025** online management platform (Award Force), which can be accessed [HERE](#) or via the **WCRR 2025** event website: Rail Research Week [HERE](#). No other means of submission will be accepted.

After writing your Abstract, click on the "Call for Papers" link to access the online conference management system. You will be able to paste your Abstract (text, tables and equations) into the content boxes provided in the submission form.

You will also be asked to provide information about the paper author(s) and affiliations.

SUBMISSION PORTAL

Start your submission process by visiting the online management platform <https://ihha-wcrr.awardsplatform.com/>

TYPES OF PRESENTATION

There will be two types of presentations at WCRR 2025.



Oral Presentations

15-minute presentations followed by a 5-minute question and answer session. Best suited to topics that are of interest to a wider audience, covering subjects that will appeal to a broad range of experts.



Interactive Presentations

Interactive session using visual aids (digital posters and videos) featuring 5-minute presentations followed by smaller group discussions. Best suited to specialist technical presentations on a specific research topic. These presentations can be supported with additional demonstration material.

Authors of Abstracts will be asked about their preferred presentation type. The author's preference will not affect the chance of their Abstracts being selected and all selected papers will be treated as equally important in the Congress Proceedings, differing only in the format of the presentation sessions.

Please note that the Congress organisers will make the final decision on the type of presentation to be assigned, which may not be able to accommodate your preference.



ABSTRACT REQUIREMENTS

In the Abstract submission section of the online conference management system, you will be asked to describe the content of your research, please provide details of the following:

1. The link with the related topic/subtopics
2. Summary of challenge(s) addressed by this research
3. The methodology
4. Results or expected results
5. What is new about the research?
6. Take up so far and/or implementation plan
7. Desired outcome and impact of research for key beneficiaries
8. Potential for international collaboration

ABSTRACT TEXT LENGTH

The total length of the Abstract is the sum of the number of words of all the paragraphs of items 1 to 8 described above, and this total must be a minimum of 800 words and a maximum of 1200 words (words in the figures, tables, and equations, including captions, labels, and legends will not be counted towards this total), and must be written in English. The text length of EACH of items 1 to 8 should be a minimum of 1 complete sentence, and a maximum of 500 words.

FIGURES AND EQUATIONS

Figure(s) are highly recommended to be included (though not required), to help explain/visualize your ideas (maximum 2 figures). The figures can be graphs, tables, photos, illustrations or anything else that will help the reader understand your research. Equations are not expected or required but may be included if needed.

EXTENT OF CONTENT ORIGINALITY

Abstracts that have been submitted recently to other congresses will not be accepted. If you are submitting a paper on a subject that you have presented at previous WCRR congresses, then the paper must focus on the new developments since then. Commercial papers (i.e. advertising a product) will not be accepted so please emphasize the research content in your Abstract.





COPYRIGHT

At the time of submitting your full paper, you will be asked to also agree to a copyright transfer statement to transfer publication and other rights to the Congress organizers. Details will be available online at a later date.



ABSTRACT REQUIREMENTS

IMPLICATIONS OF SUBMITTING AN ABSTRACT

-  By submitting an Abstract, it will be expected that author has the authorization from their organization to submit a full paper for presentation at WCRR 2025.
-  If your Abstract is accepted as a paper for presentation, you will be expected to submit a full paper and to attend the WCRR 2025 to present it, in either an Oral or Interactive session.
-  Presenters of papers must attend WCRR 2025 to present their papers in person.
-  To do this, the presenters must register online for WCRR 2025. Failure to register for, attend and present the paper in person may result in the paper being excluded from being published in proceedings.

CRITERIA FOR ABSTRACT SELECTION

Abstracts will be assessed using the following criteria which will have weightings attached.

Thematic relevance - Is the abstract relevant to one or more of the Conference themes and topics?

Quality of content - Is the abstract well written, technically sound, with the methodology, results and conclusions clear and easy to understand?

Take up and implementation - Is it clear how the results are practically implementable and useful to improve the railway for its customers and the wider society?

Innovation and scientific contribution - Is this research new/novel or has it been done before by someone else (or by the author)?

Deadline for abstract submission: September 27, 2024



TIMELINE



CALL FOR ABSTRACTS OPENING

June 2024



DEADLINE FOR ABSTRACT SUBMISSION

September 27, 2024



CONFIRMATION OF ACCEPTED ABSTRACTS

January 2025



FULL PAPERS TO BE PROVIDED FOR REVIEW

June 2025



DEADLINE FOR EARLY BIRD REGISTRATION

July 18, 2025



DEADLINE FOR SUBMISSION OF THE FULL AND FINAL PAPER

September 2025



DEADLINE FOR SPEAKER REGISTRATION

September 2025



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TERMS & CONDITIONS

- Submitting author(s) declares that the abstract/s or workshop proposal/s submitted are the original work of at least one author/presenter and do not conflict with any existing copyright agreements.
- Oral presentations can only be presented by a maximum of two authors – the presenters must be a listed author on the submission.
- All accepted presenters are required to register, pay, attend and present their material in person at WCRR 2025. Note that papers with multiple authors require the attendance of at least one author.
- No funding is provided to presenters.
- Commercial abstracts will not be accepted.
- Submitting author(s) accept the Event Organisers (Informa) data protection and privacy policy. Informa collects, uses and protects personal data in accordance with its privacy policy, which can be found here: <https://www.informa.com/privacy-policy/>.
- If the submission is selected, consent is provided for the presentation slides, video, audio recording and photos taken during the presentations to be used and published by the MxV Rail and Informa, including being provided to delegates of WCRR 2025.
- If your abstract is accepted, you must submit a full paper which will be peer reviewed.
- At the time of submitting your full paper, you will be asked to also agree to a copyright transfer statement to transfer publication and other rights to the WCRR 2025 organizers. Details will be forwarded directly to authors at a later date.'

Further questions

If you have any queries about your submission or require any further information, please email ihha.wcrr@informa.com or call +61 (0) 406 530 603



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