

**12<sup>th</sup> International Conference**  
**TUNNEL SAFETY AND VENTILATION**

**April 16 – 17, 2024**

Graz, Austria

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## PREFACE

Dear Ladies and Gentlemen,

the proceedings present the papers from the 12th International Conference on Tunnel Safety and Ventilation, which took place in Graz on April 16-17, 2024.

This conference was initiated by Peter Sturm more than 20 years ago and over the years has established itself as an important meeting place to provide a forum for information exchange among operators, users, technicians, scientists and companies involved in the design, construction and equipping of road and railway tunnels and highlights the need for ongoing global research and discussion on these important issues.

The papers in the proceedings provide new and interesting insights into various important aspects of tunnel safety and tunnel ventilation, thus contributing to a positive and sustainable global development in this sector.

During the conference, participants discuss a number of different topics, including railway and road tunnels, alternative propulsion systems, sustainable energy use, tunnel refurbishment, risk analysis, system testing and ventilation.

In today's rapidly changing world, the importance of these issues cannot be overstated. Tunnels and underground infrastructure play an important role in transportation and support economic growth and societal well-being. Therefore, innovation and collaboration are essential to ensure their resilience and sustainability. The knowledge in these proceedings reflects the expertise and commitment of researchers, engineers, policy makers and industry experts. Together, we aim to tackle current challenges and pave the way for safer and more efficient tunnel infrastructure.

The technical visit consists of a tour to the new railway station Wettsmannstätten and the Koralmtunnel, including its ventilation building and a typical technical cross-passage. These facilities show how impressive the safety equipment of railway tunnels can be. In this context, we would like to thank the Austrian Federal Railways (ÖBB) in particular for their support.

We also wish to express our gratitude to our Scientific Committee for its valuable work. We would also like to thank the authors for their hard work in preparing abstracts, papers, and of course their presentations.

Finally, we would like to thank all those who worked tirelessly behind the scenes to ensure that this conference ran smoothly, enjoyable, and effectively for all participants.

Michael Bacher and Organizing Committee

## ACKNOWLEDGEMENT



We would like to take this opportunity to express our special thanks to **Peter-Johann Sturm!**

Peter took his well-deserved retirement on October 1, 2023, but he will continue to be available to us with his expertise.

With the International Conference on Tunnel Safety and Ventilation, Peter established an important platform for knowledge transfer between researchers and industry.

Peter embodies the spirit of this event for many participants who have been attending our conference for years and decades as speakers, panellists or exhibitors.

His long-term presence and commitment make him a symbol of the continuity and excellence that characterise our conference.

Thanks to his expertise and passion, Peter has contributed immensely to the success and importance of this event. His name will be intrinsically tied to the success and history of the conference.

Michael Bacher, Helmut Eichlseder

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