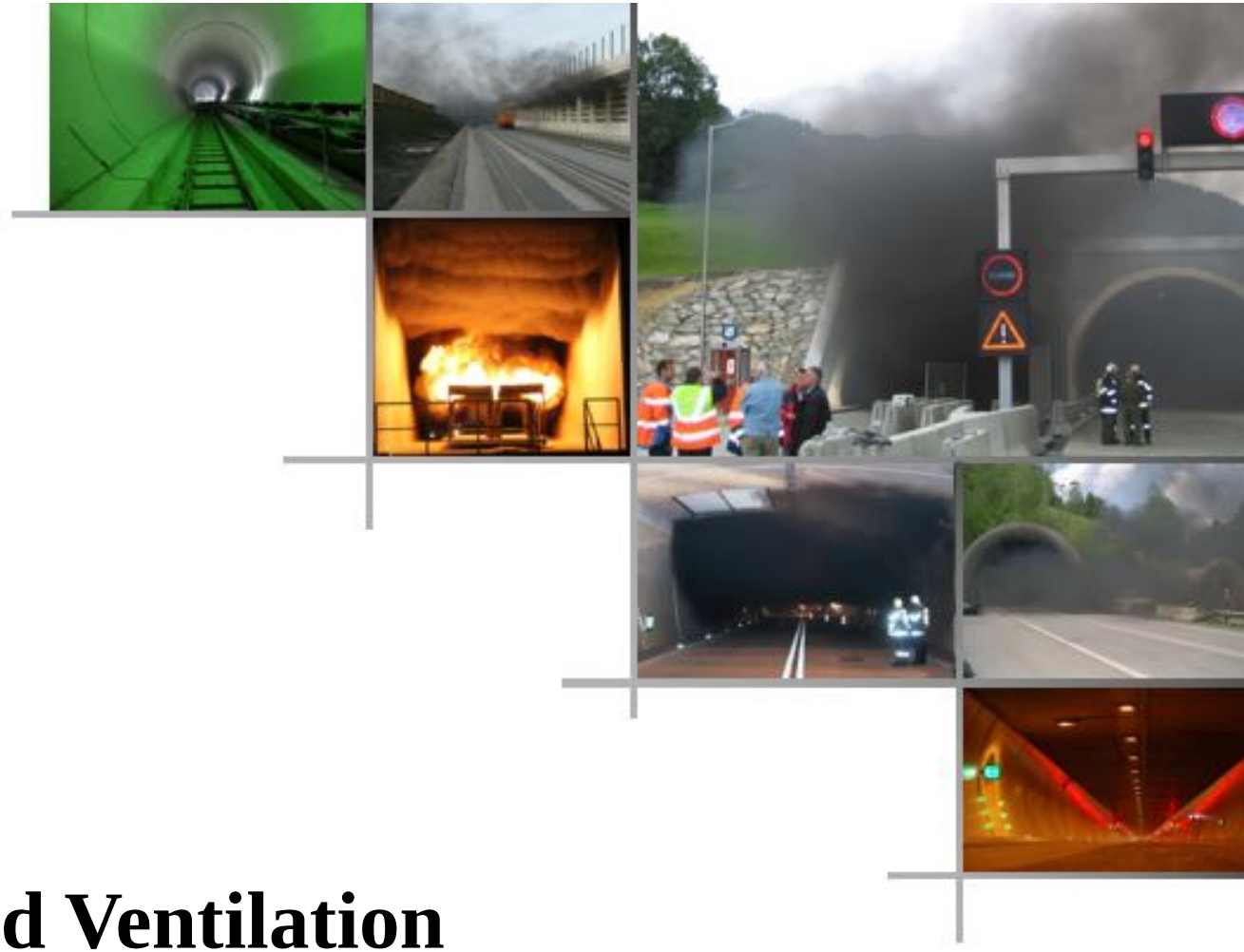
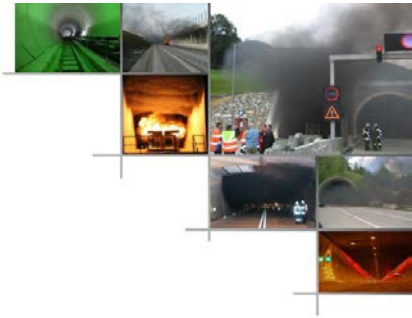


International Conference

Tunnel Safety and Ventilation

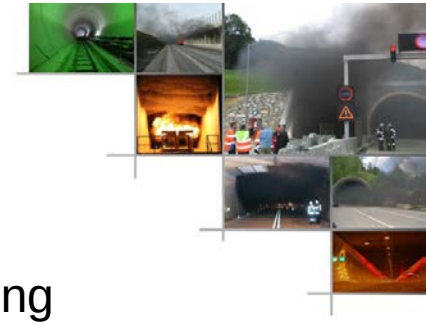
Sicherheit und Belüftung von Tunnelanlagen

December 1st – 3rd, 2020



International Conference „Tunnel Safety and Ventilation“ Graz, 2020

Why Graz University of Technology/IVT as a host?



IVT was involved since the 1960's in research and experiments concerning vehicle emissions (fresh air demand) in road tunnels and fire tests (R. Pischinger, K. Pucher in cooperation with A. Härter)

Emission data for PIARC ventilation design guidelines have been provided since the 1970's from IVT

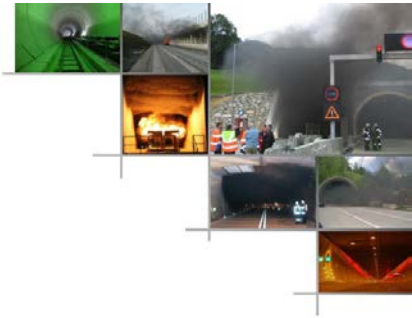
Main partner in EUREKA 499 Firetun experiments 1990 – 1995

Enforcement of massive smoke extraction systems in transverse ventilated tunnels as a result of the big fire incidents in the late 1990's

First closed loop ventilation control system for smoke management in transverse ventilated tunnels with massive smoke extraction (Plabutsch tunnel, A, twin tube 10 km long, 2004)

Development of novel strategies for ventilation control for refurbished tunnels with transverse ventilation systems – including "re-introduction" of devices like Saccardo nozzels (2010)

Fire tests of Battery Electric Vehicles in Tunnels (2019/20)



9 Conferences – The story so far

1st Conference 2002

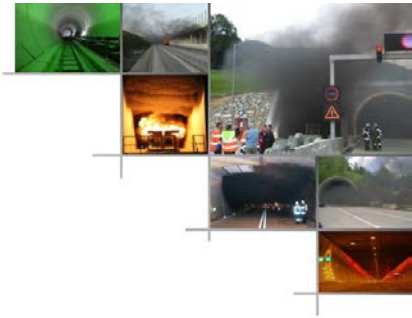
- Mt. Blanc, Tauern Tunnel fires and the consequences
- Fire and smoke control in road tunnels
- Introduction of massive smoke extraction concepts in A and CH

2nd Conference 2004

- Incident detection
- Closed loop ventilation control systems
- User behavior

3rd Conference 2006

- Early incident detection
- FFFS
- Data security in the ethernet



9 Conferences – The story so far

4th Conference 2008

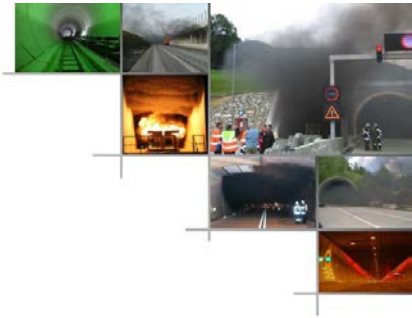
- Reality of tunnel operation
- Ventilation control in complex tunnels (Blanka tunnel, Prague)
- Human behavior

5th Conference 2010

- Implementation of ‘novel’ systems into tunnel infrastructure
- Usage of tunnel safety infrastructure by tunnel users, operators view and legal view
- Recognition of hazmat in tunnels

6th Conference 2012

- Risk assessment
- Ventilation issues concerning long rail tunnels and metro systems
- Value of escape possibilities in relation to technical safety installations



9 Conferences – The story so far

7th Conference 2014

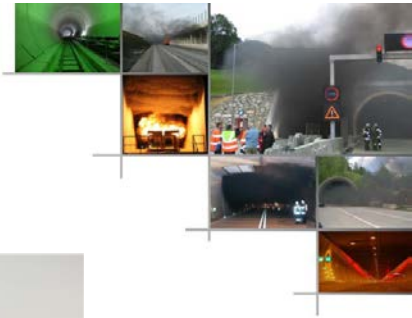
- Regulatory requirements vs. real life tunnel operation
- Refurbishment and upgrading of existing tunnels
- Fire, risk and governance – contradicting topics?

8th Conference 2016

- Consequences of false alarms
- Artificial Intelligence in operation systems
- Control design, testing, and simulation of tunnel ventilation systems

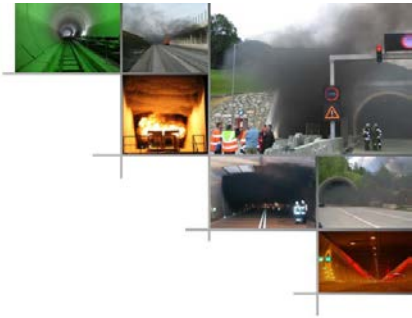
9th Conference 2018

- Operation and safety challenges for long railway tunnels
- Full scale fire tests
- Long time research and operation experience with sound based incident detection



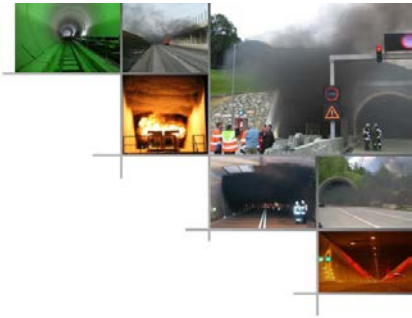
This year's event

Of course, we will miss live presentations ….



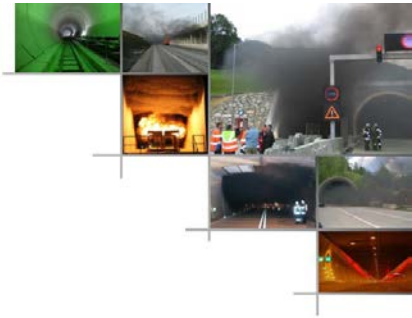
This year's event

…. polite chairmen, taking care of the sessions

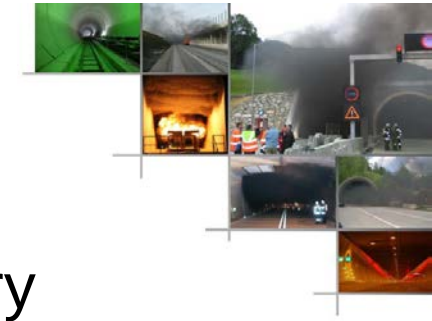


This year's event

….. on site exhibition

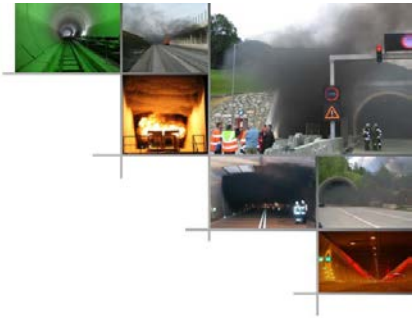


..and the Conference dinner



However

- I am confident, that we will have 3 (half) days with very interesting and thrilling presentations on up-to date topics
- The topics of this year's event are
  - Challenges for tunnel operators
  - Effects of new energy carriers on tunnel safety and infrastructure
  - Cybersecurity and resilience of tunnels
  - Design issue
  - Risk assessment and evacuation
  - ……
- Content as interesting as usual, but …..the format is different



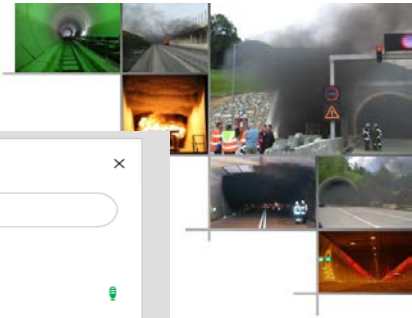
Some practical information

- Plattform Cisco Webex Events

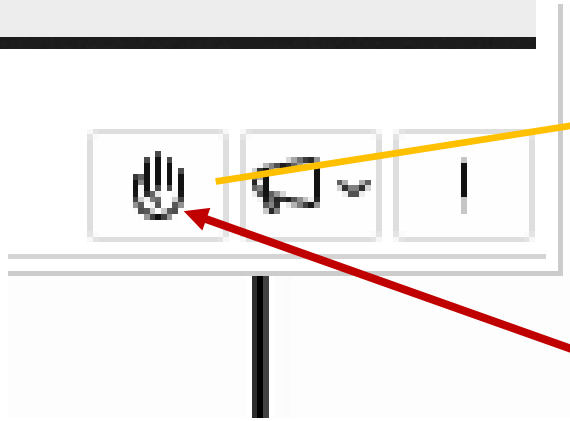
- Link for every day new ……
- You are automatically registered as an attendee
- Questions: please use the chat function in order to inform the chairman about your question
  - If possible the chairmen will give you the floor for your question or any other kind of contribution
  - Alternatively you can post your question and the chairman will forward it to the presenter
- Start every day

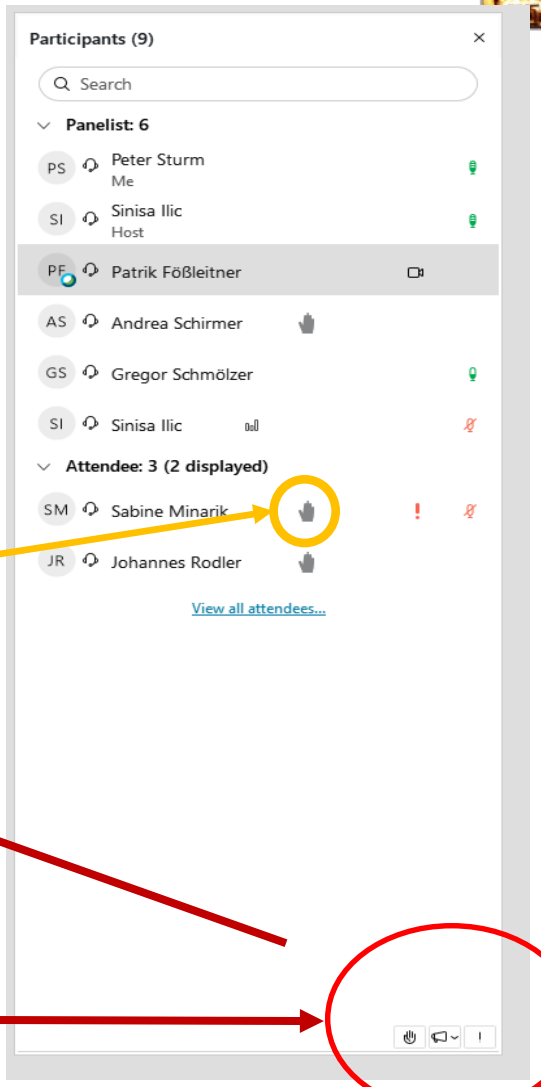
Graz	13:00 (ETC)	New York	7:00 (EST)
Tokyo	21:00 (JST)	Sydney	23:00 (AEDT)
Beijing	20:00 (CST)	London	12:00 (GMT)

Questions in Webex

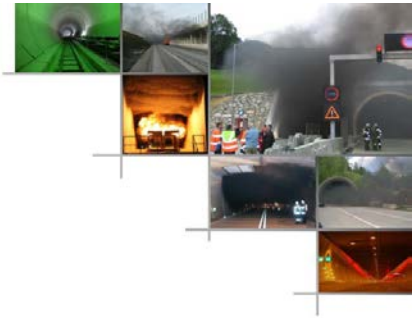


Chat function



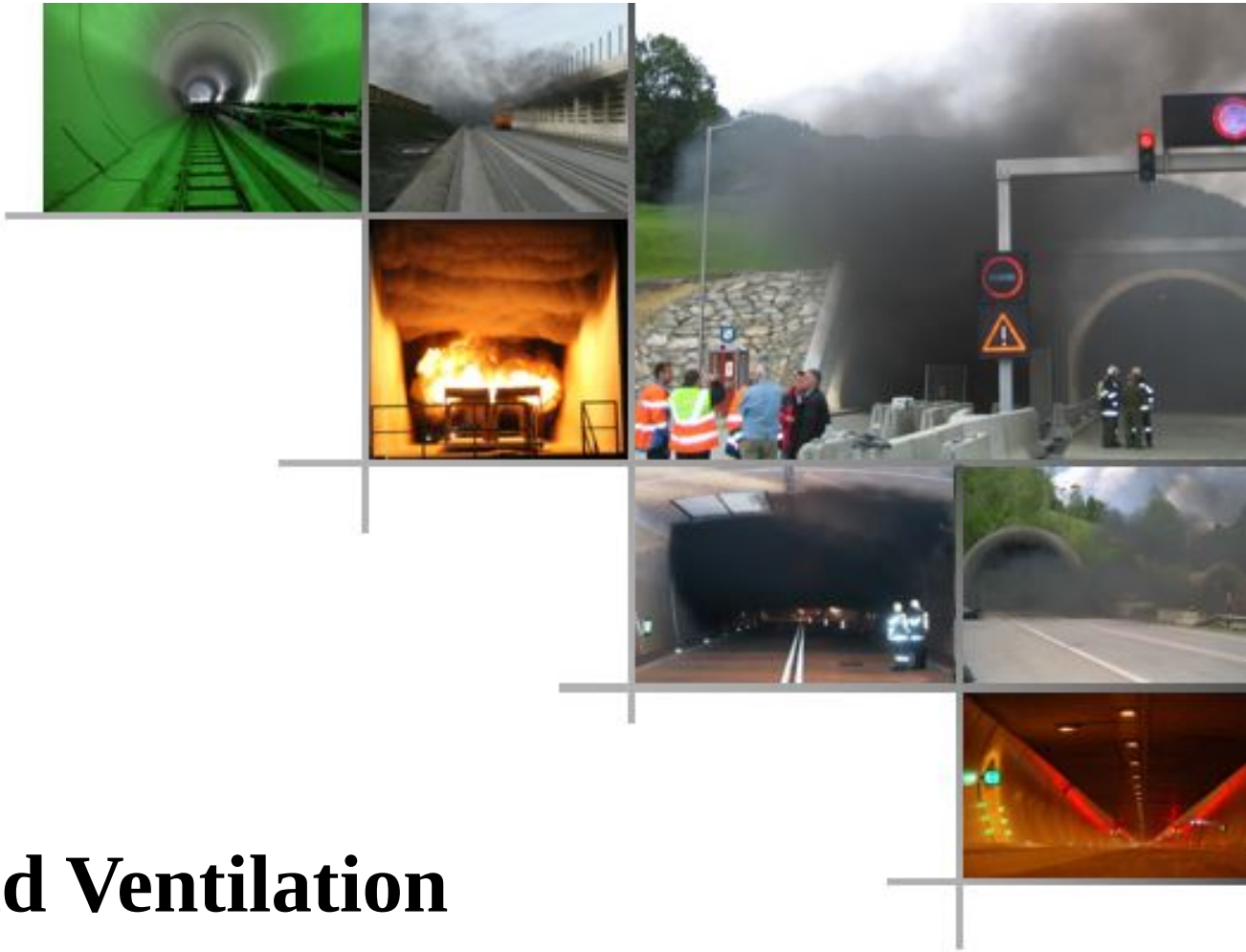


Raise your hand!



Online exhibition

- There is a special virtual room for the exhibition
- It can be easily accessed by visiting the conference homepage www.tunnel-graz.at and use the exhibition button (https://www.tunnel-graz.at/online-exhibiton.html)
- Information about various companies
  - Direct contact to company's representative



International Conference

Tunnel Safety and Ventilation

Dec. 1st to 3rd 2020

Next 10th Conference April 15th -17th 2022