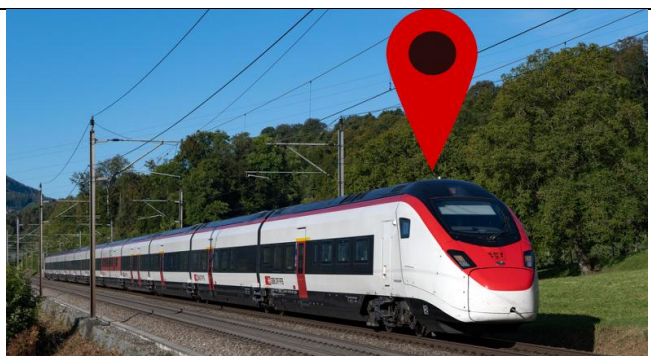


Invitation to an ION-CH / IEEE joint lecture Space Geodesy ETH Zürich

Enhancing the Performance and Robustness of the Railway System with Safe Positioning

Dr. Andreas Wenz, SBB Infrastructure

Date: 12.05.2026
Time: 17.00 – 18.00
Place: ETH Zentrum
Building, Room: HG, D 3.3
Organiser:
Info@ION-CH.ch
<https://ION-CH.ch>



Speaker:

Dr. Andreas Wenz is a project manager and technical expert for Localisation and Odometry at SBB Infrastructure. He participates and leads multiple research and development projects in the field of safe train positioning and leads the Center of Competence for Localisation. He obtained his Master in Electrical Engineering and Information Technologies from Karlsruhe Institute of Technology in 2014. Afterwards he worked as a researcher at the Norwegian University of Science and Technology, in Trondheim, Norway receiving his Ph.D. in Engineering Cybernetics in 2018. Dr. Wenz's research focus is on navigation and sensor fusion for safety-critical applications in autonomous vehicles.

Abstract:

“Command, Control and Signaling” (CCS) systems are needed to ensure the safety of train operations. At the same time these systems increase cost and decrease capacity of the railway system. One way to address this issue is to introduce a train focused approach to CCS, where the position of a train is no longer detected by track side systems but reported by the train autonomously. This allows for increased capacity and lower investment and operating costs. By using technologies such as satellite navigation, inertial sensors and map-based navigation, a safe and accurate position of a train can be determined and used within the train control system.

This talk will present an overview over the research and development activities in the Swiss and European railway sector. The main topics will be:

- Introduction into the Railway CCS System
- Benefits of Advanced Safe Train Positioning (ASTP) in the Rail Domain
- Requirements and Challenges for Positioning Solutions
- Solutions for Advanced Safe Train Positioning
- Measurement and Experimentation Facilities at SBB
- Results from selected Research Projects