2021 Virtual International Crosstie & Fastening System Symposium

19 May 2021 - 16 June 2021
Preliminary Program
Welcome

The 2021 Virtual International Crosstie & Fastening System Symposium program will include more than 25 pre-recorded presentations that will be provided free of charge to attendees. Recordings of technical presentations will be released by topic area over a 5-week period for viewing throughout the remainder of 2021.

Instructions

Subscribe here to receive email announcements.

Presentation recordings and slides will be published on their scheduled Wednesday at: https://crosstie.railtec.illinois.edu/virtual/

Overview

Track Inspection Advancements and Applications
19 May 2021 | Sponsored by

Concrete Crosstie Design and Performance
26 May 2021 | Sponsored by

Resilient Materials and Crosstie Support
2 June 2021 | Sponsored by

Composite and Interspersed Crossties
9 June 2021 | Sponsored by

Fastening System Design and Performance
16 June 2021 | Sponsored by
Next Generation Imaging for Crosstie Inspection
  Antonio Mauricio & Jeb Belcher – Loram Technologies, Inc.

Use of Laser Triangulation Technology for Track Condition Change Detection
  Richard Fox-Ivey – Railmetrics
  Ryan Harrington – University of Illinois Urbana-Champaign

Holland Track Testing Fastening System Inspection and the Role of GRMS in Geometry Analysis
  Russ Newberg & Sabri Cakdi – Holland

Intelligent Railroad Track Components Inspection
  Yu Qian & Feng Guo – University of South Carolina

Advancing GRMS Technology to Improve Track Structure Characterization by Assessing Emerging Failures
  Hugh Thompson – Federal Railroad Administration (FRA)
  Ted Sussmann – Volpe National Transportation Systems Center

Presentations Available Here
19 May 2021
Presentation Title TBD
  Bob Peterman – Kansas State University
  Steve Mattson – voestalpine Nortrak

Adaptive Prestressing System for Concrete Crossties using Shape Memory Alloys
  Minsoo Sung & Bassem Andrawes – University of Illinois Urbana-Champaign

The Effect of Water Flow in Cracks of Pretensioned Concrete Beams under Cyclic Loading
  Josué Bastos – Technicontrol

Implementing DIC Technologies in Performance Assessment and Quality Control of Concrete Ties
  Dimitris Rizos – University of South Carolina

Development of an ASTM Standard for Measurement of Key Indented Reinforcement Characteristics
  Terry Beck – Kansas State University

Presentations Available Here
26 May 2021
BNSF Experience with Resilient Materials and Track Support
Erik Frohberg – BNSF Railway
Arthur Lima – University of Illinois Urbana-Champaign

Track Geometry Errors Caused by Convex Turnout Crossties
Riku Varis & Tommi Rantala – Tampere University

Effects of Mixed Traffic Patterns and Ballast Support Conditions on Track Performance Investigated through Discrete Element Modeling
Erol Tutumluer, Zhongyi Liu & Bin Feng – University of Illinois Urbana-Champaign

The Use of Under Sleeper Pads and Under Ballast Mat to Improve the Performance of Railway Transition Zones
Melina Clara Scasserra, Carlos Aprile, Pablo Cocordano, Pablo Tanaro & Nicolas Beradi – Trenes Argentinos Infraestructura

Development and Use of Tests on Under Tie Pads in Regards to the European Standard
Veronika Kollmeier – Technical University of Munich (TUM)

Quantifying Support Conditions underneath Railroad Ties using the Differential Shear Strain Approach
Deb Mishra – Oklahoma State University

Quantification of the Effect of Train Type on Concrete Sleeper Ballast Pressure using a Support Condition Back-Calculator
Riley Edwards – University of Illinois Urbana-Champaign
Nonlinear Structural Analysis of Recycled Polymer Composite Crossties under Flexural and In-situ Loading Applications using Finite Element Analysis

David Jack & Daniel Pulipati – Baylor University

Evaluation of Use Concrete, Steel and Composite Crossties Interspersed with Wooden Crossties in a Brazilian General Freight Corridor

Patrick Macedo – VLI

A New Track Homologation Methodology - Polymeric Crossties Approach

Aldo Machado & R. Vargas – Braskem
A. Merheb – MRS Logistica S/A

Field Assessment of Engineered Interspersed Concrete Crossties in Commuter Rail Ballasted Track

Jaiek Lee & Arthur Lima – University of Illinois Urbana-Champaign

Union Pacific Composite Tie Strategies

Rachel Beck – Union Pacific Railroad
Effect of Fastening System Components on Spike Load Transfer
Christian Khachaturian & Marcus Dersch – University of Illinois Urbana-Champaign

Investigation of Rail Load Distribution: from Wheel Load to Spike Load
Shushu Liu – Volpe National Transportation Systems Center

Automated Broken Spike Detection Using Ultrasonic Testing
Yin Gao & Anish Poudel – Transportation Technology Center, Inc. (TTCI)
Cameron Stuart – Federal Railroad Administration (FRA)

Test and Verification Methods of Rail Fastening Systems Applied in Japan
Tadashi Deshimaru – Railway Technical Research Institute

Direct Fixation Track Fastening System Design – Field Loading Demands and Behavior, and Anchorage Structural Capacity
Arthur Lima – University of Illinois Urbana-Champaign

Direct Fixation Track: History and Development
Sheen Fong – LB Foster
Matt Gibbs – Chicago Transit Authority (CTA)
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