SYMPOSIUM ON RAILROAD BALLAST TESTING AND PROPERTIES

Sponsored by ASTM Committee D18 on Soil and Rock.

Symposium Chairs: Timothy Stark
University of Illinois at Urbana-Champaign
Champaign, IL, USA

Richard Szecsy
Texas Aggregates and Concrete Association
Austin, TX, USA

ABOUT THE SYMPOSIUM

This symposium will address best practices for field and laboratory ballast testing including ballast sampling, reconstitution, transportation, gradation testing, direct shear testing, and triaxial compression testing. The symposium will start with a tribute to Professor Ernest T. Selig and Professor Theodore R. Sussmann, Jr. (U. of Hartford) and a keynote presentation by Buddhima Indraratna (U of Wollongong). The ideas and test methods presented and debated will be used to develop ASTM standards tailored for field representative ballast sampling and laboratory testing. Field techniques for testing ballast, e.g., ground penetrating radar, will also be discussed. The symposium will end with a panel discussion developing a list of Ballast Research and Test Method Needs. Field and laboratory testing presentation topics include:
WEDNESDAY, JANUARY 24, 2018

8:00 AM
Greetings and Introductions
T. Stark, R. Szecsy, J. Germaine

8:15 AM
Ernest T. Selig Memorial
T. Sussman, John A. Volpe Transportation Center, Cambridge, MA and University of Hartford

8:45 AM
Keynote: Two decades of Advancement in Process Simulation Testing of Ballast - Strength, Deformation, and Degradation
B. Indraratna, University of Wollongong

9:45 AM       BREAK

SESSION 1: FIELD TESTING

10:15 AM
Methods to Assess Impact of Ballast Condition on Track Structure
T. Sussmann, John A. Volpe Transportation Center, Cambridge, MA and University of Hartford

10:45 AM
K. Scanlan, University of Alberta

11:15 AM
Man-Portable Real-Time Ballast Inspection Device Using Ground Penetrating Radar
C. Oden, ESS, LLC

11:45 AM
Evaluating Ballast Stabilization during Initial Compaction Phase
H. Huang, Penn State-Altoona

12:15 PM       LUNCH (on your own)

1:15 PM
Field Validation of Polyurethane Technology in Remediating Rail Substructure and Enhancing Rail Freight Capacity
J. Tinjum, University of Wisconsin
SESSION 2: LABORATORY TESTING

1:45 PM
Large Scale Triaxial Tests on Railway Embankment Material
R. Dyvik (NGI)

2:15 PM
Large Direct Shear Tests on Performed with Fresh Ballast
Maria Ruez & Jose Estaire, CEDEX Track Box, Laboratorio de Geotecnia, Madrid, Spain

2:45 PM       BREAK

3:15 PM
Large-Scale Testing Box: a Tool to Evaluate the Structural Performance of Railway Tracks
Miguel Sol, University of Granada

3:45 PM
Evaluation of Ballast Particle Movement Using SmartRocks for Track Transitions
Yin Gao, TTCI

4:15 PM
Large-scale Laboratory Testing of the Lateral Resistance of a Timber Tie
C. Mulhall and M. Hendry, University of Alberta

4:45 PM
Panel Discussion: Ballast Research & Test Method Needs
T. Stark, University of Illinois, Moderator

5:00 PM
Summary and Questions
T. Stark, R. Szecsy, & J. Germaine

5:15 PM       SYMOSIUM ADJOURNS