IV SEMINARIO INTERNACIONAL OBRAS DE TIERRA EN EUROPE
19 y 20 abril de 2018 / April 19 and 20 2018
Madrid (Spain)
Geotechnical Laboratory, CEDEX

As part of CEDEX, the Laboratorio de Geotecnia is a Centre that specialises in conducting research work, experimenting and providing technical assistance in all the civil engineering activities that are associated with the ground.

Track Box CEDEX

CEDEX Track Box (CFC) is a 21 m long, 5 m wide and 4 m deep facility whose main objective is to test, at 1:1 scale, complete railway track sections of conventional and high speed lines for passenger and freight trains, at speeds up to 400 km/h.
11:00-13:00  THEME 5 SESSION  
(continuation) Sustainability and optimal use of local materials

Associated Communications:

- Lightweight fill with expanded clay aggregates. Czech experience  
  Vitezslav HERLE

- Special features regarding the testing of processed mineral construction waste in earthworks  
  Dirk HEYER

- Professionals' commitment to sustainability, the French experience  
  Patrick BOISSON

- From Steel to Earthwork, feedback of the use of steel slag in France  
  Pascal LÉCONTE

- Solutions for embankments in loams of the Olivar Road, Jaén (Spain)  
  Ignacio MOCHÓN

- Steel slag and steelwork waste in earthworks and their swelling potential  
  František KRESTA

  environmental protection measures and the use of local materials  
  Jose LÓPEZ

- Study of clayey marles (TAP facies) for embankment use in Comunidad Valencia  
  (Spain)  
  María Elvira GARRIDO, Carlos HIDALGO, Luis FERNÁNDEZ & Vicente FERRER

- Swell reduction in marles by adition of rubber particles from tires out of use  
  Carlos HIDALGO, María Elvira GARRIDO, Luis FERNÁNDEZ & Vicente FERRER

Beyond Europe... :

- Use of salts for granular wearing coarses in Chile  
  Osvaldo AGUAYO

- Slurry seal in Perú  
  Víctor ARÉVALO

- From Proctor to Marshall: disruptive use of polymeric resins on unpaved road  
  Mariano BARONE & Bernardino CAPRA

13:00-13:30  CONCLUSIONS AND CLOSING SESSION OF THE SEMINAR
• Solutions to subsidence phenomena in gypsiferous soils through the use of a final system of reinforcement with high modulus geogrids in the railway facility Plaza de Zaragoza (Spain)
  Marco T. RODRÍGUEZ & Ignacio DIEGO

• The use of InSAR as a forensic engineering tool to assess settlements in road embankments
  Josep RAVENTOS & Jordi SÁNCHEZ

21:00       DINNER

FRIDAY 20 APRIL

09:00-10:00  THEME 4  SESSION
Adaptation to climate change

GENERAL SPEAKERS:
Véronique Berche. CEREMA & Alberto COMPTE, CEDEX

• Exposure of earthworks structures and rural roads to climate change
  Véronique BERCHE

• Lessons learned from the analysis of climate change adaptation needs of the Spanish State-owned Road Network
  Alberto COMPTE

10:00-10:30  THEME 5  SESSION
Sustainability and optimal use of local materials

GENERAL SPEAKER:
Aurea Peruch. CEDEX

• The use of local materials in road embankments
  Aurea PERUCHO & Enrico MITTIGA

10:30-11:00  COFFEE BREAK
Associated Communications:

- Three major projects delivered in 2017
  Patrick BOISSON

- Hydraulic filling for the regasification plant at El Musel Port. Properties and Correlations. (Gijón, Spain)
  Ana COZ, José Miguel GARCIA-GUTIERREZ, Julio C. GARCIA-SUÁREZ & Fernando ROMAN

- Excavation criteria of rock masses. Correction factors. Its application to cuttings in slates with sandstone
  Rubén GALINDO & Fernando ROMAN

- Innovative process to optimize the pavement structure: incorporation of hemp fibers into the subgrade
  Valery FERBER

- Construction of a platform for a train of high-quality features in the Castejón Section – Pamplona region (Navarra, Spain)
  Patricia AMO

17:00-17:30  COFFEE BREAK

17:30-19:00  THEME 3 SESSION
Geotechnical risk analysis

GENERAL SPEAKER:
Laura Caldeira. LNEC

- Geotechnical risk analysis
  Laura CALDEIRA

Associated Communications:

- Geotechnical asset management system along Generalitat de Catalunya (GENCAT) Road Network (Spain)
  Illán PANIAGUA, Eugenia ÁLVAREZ & José Antonio MARTÍN-CARO
12:00-13:30  THEME 1 SESSION (continuation)
European standardization

9 to 11 CEN / TC 396 Other works in progress
- WG 6: Hydraulic placement of extractive waste
- WG 7: Use of secondary manufactured and recycled materials in Earthworks
- WG 8: Test methods
  - František KRESTA
  - Thibaut LAMBERT

12 to 15  Associated Communications (Soils Treatment and improvement Works):

- The use of lime treated soils in water retaining structures
  Daniel PUIATTI, Gontran HERRIER, Nicolas NERINCX, Stéphane BONELLI & Jean-Jacques FRY

- Contribution of lime treatment to the frost protection of roadbeds
  Gontran HERRIER, Thi Thanh Hang NGUYEN, Valéry FERBER, Daniel PUIATTI & Yu-Jun CUI

- Modification of ADIF technical standards relative to materials for embankments and to soil treatment with lime
  Jose ESTAIRE, Maria SANTANA, Mario ROBLES & Francisco CABRERA

- Modification of UIC Code 719 “Earthworks and Track Bed Construction for Railway Lines” according to the principles developed in EN 16907 Earthworks
  Jose ESTAIRE, Maria SANTANA & David VILLALMANZO

13:30-15:30  TECHNICAL VISITS / LUNCH

15:30-17:00  THEME 2 SESSION
Projects and special achievements

GENERAL SPEAKER:
Fernando Pardo. CEDEX

- Research studies on railway geotechnics at CEDEX
  Fernando PARDO, José ESTAIRE & José Luis GARCÍA DE LA OLIVA
THURSDAY 19 APRIL

09:00-09:30  RECEPTION AND ACCREDITATIONS

09:30-10:00  OPENING OF THE SEMINAR

10:00-11:30  THEME 1 SESSION
European standardization

1  Specificity of Earthworks activity
   Guy RAOUL, Committee CEN/TC-396

2  Standard EN 16907 “Earthworks” / Normative aspects
   Benoît SMERECKI

3 to 8  Short presentations / Content of each part of the standard EN 16907 and particular comments

   - Part 1: Principles and general rules
     Jean-Pierre MAGNAN

   - Part 2: Classification of materials
     Angel JUANCO

   - Part 3: Construction procedures
     Jean-Pierre MAGNAN

   - Part 4: Soil treatment with lime and/or hydraulic binders
     Daniel PUIATTI

   - Part 5: Quality control
     Jean-Pierre MAGNAN

   - Part 6: Land reclamation earthworks with dredged hydraulic fill
     Jean-Pierre MAGNAN

11:30-12:00  COFFEE BREAK
TECHNICAL COMMITTEE

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President
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D.ª Laura Caldeira
Laboratório Nacional de Engenharia Civil

D.ª Véronique Berche
Centre d’études et d’expertise sur les risques, environnement, mobilité et l’aménagement

D. Fernando Pardo
Centro de Estudios y Experimentación de Obras Públicas

D. Roberto Sandoval
Asociación Mundial de Carreteras / World Road Association

D. Fernando Román
E. T. S. Ingenieros de Caminos, Canales y Puertos

SECRETARIAT OF THE SEMINAR

ASOCIACIÓN TÉCNICA DE CARRETERAS
C/ Monte Esquinza, 24, 4º dcha
28010 Madrid (España)
Tel.: (+34) 91 308 23 18 e-mail: congresos@atc-piarc.com

VENUE AND DATES

CENTRO DE ESTUDIOS Y TÉCNICAS APLICADAS,
CETA (CEDEX) - MADRID
C/ Alfonso XII, 3, 28014, Madrid
19 Y 20 DE ABRIL DE 2018 / 19 AND 20 APRIL 2018

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Centro de Estudios y Experimentación de Obras Públicas

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D. Roberto Sandoval
Asociación Mundial de Carreteras / World Road Association

D. Carlos Oteo
Asociación Técnica de Carreteras

D. Alberto Bardesi
Asociación Técnica de Carreteras
**IV International Seminar: Earthworks in Europe** will be held in Madrid (Spain), on April 19 and 20, 2018. It is the fourth on the list of homonimous seminars (Paris 2005, London 2009, Berlin 2012) devoted to design, construction, maintenance and monitoring of earthworks. These concepts mean, as an average, 15 to 25% from total budget of public works all over the Old Continent.

Specialists will analyze and update a list of topics:

- **European standardization**: by the date of the seminar is expected to be concluded formal vote stage on European Standard “EN 16907 Earthworks” in which experts from all over the continent have been working since 2009. It will be presented by some of their authors.

- **Projects and special achievements**: since Berlin 2012 seminar, many projects and construction works have been built. A brief summary of some of them is expected, thus free communications are specially needed on this topic!

- **Geotechnical risk analysis**: light will be shed on a topic more and more relevant, even more when a common focus with structural engineering is intended.

- **Adaptation to climate change**: under this topic a pluridisciplinary effort is being done in the last few years. A glance from earthworks perspective is intended in this section.

- **Sustainability and optimal use of local materials**: the factibility of use of different material types for earthwork purposes, which several decades ago were thrown out, has been studied in some countries. Some of these practices and experiences shall be exposed and updated.

While the Seminar, but at special schedules, it will be possible to visit CEDEX installations as Geotechnical Laboratory and Track Box (1:1 scale, complete railway track sections of conventional and high speed lines for passenger and freight trains, at speeds up to 400 km/h).
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IV INTERNATIONAL SEMINAR  
EARTHWORKS IN EUROPE  

Centro de Estudios y Técnicas Aplicadas, CETA (CEDEX) 
Madrid (Spain) 
April 19 and 20 2018