TC 3 workshop – Geotechnical aspects related to foundation layers of pavements and rail track

TC3 atelier – Aspect géotechniques concernant les couches de fondations de chaussées et de plateformes ferroviaires

A. Gomes Correia
University of Minho, Portugal

Y. Momoya
Railway Technical Research Institute, Japan

F. Tatsukawa
Tokyo University of Science, Japan

1 INTRODUCTION

This workshop was hosted by the Japanese members of TC3, Dr. Y. Momoya (core member) and Dr. N. Yoshida with the supervision of Mr. F. Tatsukawa. Other speakers were invited to participate, as well as other international experts, as the chairmen of TC3 and TC8, Dr. E. Alonso and Dr. S. Saezcliane, respectively.

This workshop covered one of the terms of reference of the TC 3 “Geotechnics of Pavement” defined for the period 2001-2005. It was a very successful workshop with an attendance of around 40 participants, showing a great interest in geotechnical engineering community in this area.

2 PROGRAM OF THE WORKSHOP

September 12, Thu., 13:30-15:00 Room: 1009 (IOF)

13:30 Opening Remarks
F. Tatsukawa, A. Gomes Correia

13:45 Pavement and rail track foundations

"Soil mechanics aspects in pavement and rail track foundations", by A. Gomes Correia, Department of Civil engineering, University of Minho, Guimarães, Portugal.

"The effect of relative humidity on the deformation and strength of granular aggregates", by E. E. Alonso, Department of Geotechnical Engineering and Geosciences, UPC, Barcelona, Spain.

"Frost heave design of pavements", by S. Saezcliane, VTT Building and Transport, Finland.

"Frost design methods for roads and railways. State of the art in France", by C. Mandat, Laboratoire Réalisation des Ponts et Chaussées, Nancy, France.

"SUSTRAK", by A. Mardassi, Ecole Centrale Paris, France (in behalf of A. Karin, Norwegian Geotechnical Institute, Norway, and D. Chouton, Ecole Centrale Paris, France).

"Shakedown theory and its application to pavement analysis and design", by W. S. Yv, H. Li & S. Joseph, Newcastle Centre for Geomechanics, University of Newcastle, UK.

"Influence of impact load on base course and subgrade by evaluation", by Y. Shiao (Hachioji Institute of Technology, Japan). T. Saito (Applied Research Co., Ltd.)

14:20 Continuous compression control

"Roller-integrated continuous compression control (CCC)", by D. Adam, Institute for Soil Mechanics and Geotechnical Engineering, Technical University of Vienna, Austria.

14:30 Reinforcement of pavements

"Reinforcement of pavements with steel mesh and geosynthetics - the COST 138 REIPAS action", by H. Rathsnaver (VTT, Technical Research Centre of Finland; VTT-Building and Transport, Géotechnique, Finland).

14:40 Influence of considering principal stress rotation in modeling and how it affects pavement and rail track performance

"Effects of continuous principal stress axis rotation on the deformation characteristics of sand under traffic loads", by Y. Momoya, I. Watanabe, E. Sato, M. Tateyama (Railway Technical Research Institute, Tokyo, Japan), M. Shioda (Integrated Geotechnologies Institute Limited, Tokyo, Japan), F. Tatsukawa (Tokyo University of Science, Chiba, Japan).

"Development and performance evaluation of multi-ring shear apparatus", by T. Ishihara and S. Muray (Hokkaido University, Sapporo, Japan) & E. Sekine (Railway Technical Research Institute, Tokyo, Japan).

"Development of an in situ prediction model considering deformation of asphalt layer and subgrade", by Y. Kawasaki (Graduate School of Science and Engineering, Department of Civil Engineering, Chuo University, Tokyo, Japan), S. Higashi (Technical Research Institute, Kaitou Road Co., Ltd., Tokyo, Japan), K. Matsui (Department of Civil and Environmental Engineering, Tokyo Denki University, Saitama, Japan), K. Honjo (Department of Civil Engineering, Chuo University, Tokyo, Japan).

Other contributions were also submitted to this workshop but not presented orally, such as:

"The effects of shear stress reversal on the accumulation of plastic strain in granular materials under cyclic loading", by S.P. Brown, Nottingham Centre for Pavement Engineering, University of Nottingham.

"Current state of the use of recycled materials in geotechnical works in Portugal", by E. Fortunato & P. Santos, Laboratory of Civil Engineering-LNEC, Lisboa, Portugal.

All of these previous contributions, and other relevant to TC3 2001-2005 activities will be published in Gomes Correia et al, 2006.