Table of contents

Preface	ix
Organization	xi
Sponsors	xiii
Keiichi Fujita lecture	
and the state of t	
Amazing underground construction technology in Japan H. Akagi	3
Keynote lectures	
Case studies and monitoring of deep excavations M. Korff	23
EPB granular soil conditioning under pressure M. A. Mooney, Y. Wu, D. Parikh & L. Mori	33
Recent underground construction projects in Korea—from rock to soft ground C. You	47
Deep excavations	
Design and construction of the substructure of a commercial development in Bogota city using a top-down sequence G. Clavellina-Miller, O. Martinez-Galvis, J. Paulin-Aguirre, T. Jeanmaire & JI. López	63
Deep excavations stabilization with ground improvement or cross walls: A comparison of both stabilization methods G.A. Pittaro	69
Ground movement estimation for underground box structures: Movements at corners J. McCallum, G.R. Taylor, J. Birks & Y.S. Hsu	75
Analytical calculation of lateral earth pressure in finite soils considering displacement of retaining wall X. Yang & G. Liu	81
Interaction with adjacent structures	
Effects of deep soil mixing and jet grouting on adjacent retaining walls and ground Y.P. Dong & A.J. Whittle	91
Parametric study of the impact of deep excavation on an existing metro station M. Mitew-Czajewska	97
Pile tunnel interaction: An analytical framework T.G.S. Dias & A. Bezuijen	105
Pile tunnel interaction during mechanized tunnelling T.G.S. Dias & A. Bezuijen	111

Mechanized excavations	
Slurry infiltration ahead of slurry TBM's in saturated sand: Laboratory tests and consequences for practice T. Xu, A. Bezuijen & T.G.S. Dias	121
A simplified chamber pressure model for EPB TBM tunneling in granular soil H. Yu, M.A. Mooney & A. Bezuijen	127
Excavation cycle dependent changes of hydraulic properties of granular soil at the tunnel face during slurry shield excavations Z. Zizka, B. Schoesser & M. Thewes	137
Rheology of foam-conditioned sands: Transferring results from laboratory to real-world tunneling S. Freimann, M. Galli & M. Thewes	145
Grout pressure distribution during TBM tunnelling T.G.S. Dias & A. Bezuijen	153
Numerical investigation of hydromechanical interactions at the tail void of bored tunnels due to grouting A.A. Lavasan & T. Schanz	161
Numerical study of segmental tunnel lining behavior during mechanized tunneling S. Fabozzi & E. Bilotta	171
Operative techniques for Earth Pressure Balanced Shield in saturated soft soils C. Chanchaya	179
Tropical residual soil data compilation as guidance for laboratory tests and EPB excavation process simulation D.G.G. de Oliveira, M. Diederichs, L.L. Rasmussen & M.O. Cecilio Jr.	185
Sequential excavations	
A new method for the prediction of settlements due to urban tunneling in soft ground N. Gilleron, A. Saïtta & E. Bourgeois	197
Deformations caused by the excavation of twin tunnels A. Pedro, T. Cancela, J. Almeida e Sousa & J. Grazina	203
K ₀ parameter influence in tunneling superficial settlements and in liner stresses V. Armigliato, A. C. G. da Silva & C. M. A. Prado	215
Analytical and numerical models for evaluation of tunnel excavation stability in a multi layered soil profile with groundwater flow <i>L.E. Sozio</i>	223
Investigation of influence zones induced by shallow tunnelling in soft soils M.N. Vu, W. Broere & J.W. Bosch	233
Effect of construction sequence of three-arch tunnel on center structure—numerical investigation J.H. Choi, J.S. Song, Q. Abbas & C. Yoo	239
Assessment of train-load-induced ground and tunnel settlement with the effect of leakage Z.K. Huang, D.M. Zhang, H.W. Huang, Y. Li & S.J. Feng	245
Numerical analysis of large-sectional pipe arch aided tunneling from ground movement perspective X. Xie, Z.H. Li, D.M. Zhang & H.W. Huang	253
Physical modelling and field tests	
Study on potential area of chloride ion attack in subway tunnel from view point of chloride ion penetration route in ground and concrete of tunnel lining S. Konishi, T. Kawabata & K. Kamei	261

Predictions of changes in pore-water pressure around tunnels in clay S. Divall, R.N. Taylor, S.E. Stallebrass & R.J. Goodey	271
The role of building dimensions and position on the response of buildings to tunnelling subsidence: Centrifuge modelling S. Ritter, G. Giardina, M.J. DeJong & R.J. Mair	277
The role of building position on the response of buildings to tunnelling subsidence: Numerical modelling G. Giardina, S. Ritter, M.J. DeJong & R.J. Mair	287
Centrifuge modelling of shaft excavations in clay N.E. Faustin, M.Z.E.B. Elshafie & R.J. Mair	295
Field measurements of ground movements associated with circular shaft construction N.E. Faustin, R.J. Mair, M.Z.E.B. Elshafie, C.O. Menkiti & M. Black	301
Effects of wall embedment on base heave failure arising from deep excavations in soft soils J.P. Panchal, S.E. Stallebrass & A.M. McNamara	309
Collapse behaviour of large rectangular tunnel in cement-admixed soils M.F.B. Zulkefli, A. Tyagi & F.H. Lee	317
Case histories	
Large-scale improvement of converting a Japan's first subway station constructed by the shield tunneling method into that of an open-cut method: Kiba Station on the Tozai Line K. Hiromoto, H. Hashiguchi & Y. Arai	327
Ground response to tunnel construction for Jakarta Mass Rapid Transit Project H. Hendarto & J.R. Standing	335
Imposed longitudinal settlement on a cast-iron tunnel from the excavation of a new tunnel beneath M. Alhaddad, M. Wilcock, C. Y. Gue, M. Z. E. B. Elshafie, K. Soga, R. J. Mair, M. Devriendt & P. Wright	343
PAT TBM improving—a case of study to Metro São Paulo D. Agnella, W.J. Giannotti, M.A. Rosatti Filho & T.O. Pires	355
Authorindey	361