

Table of contents

Theoretical aspects and constitutive laws

A new constitutive non linear model for geomaterials and applications by the finite element method <i>A.Alachaher, M.Boulon & H.Hashemolhosseini</i>	3
Elastoplastic model for unsaturated expansive soils <i>E.Alonso, A.Gens & W.Y.Yuk Gehling</i>	11
FEM modelling of self-boring pressuremeter tests on sands by means of Lade's elasto-plastic laws <i>G.Bellanova, V.N.Ghionna, G.Mazzà, F.Chillè & P.Masarati</i>	19
An automatic adaptive remeshing for modelling of shear band <i>J.Ph.Bille, R.Charlier & M.Dyduch</i>	27
Performance of the constitutive model for soil gUTS <i>R.S.Crouch & J.P.Wolf</i>	35
Minimum time step criterion in finite element analysis of unsaturated consolidation, model U-DAM <i>B.Gatmiri & P.Magnin</i>	43
Low-order finite elements in dilatant/contractant plastic flow <i>A.E.Groen & R.de Borst</i>	51
A combined constitutive model-adaptive mesh refinement formulation for the analysis of shear bands in soils <i>M.A.Hicks & A.Mar</i>	59
A non-linear anisotropic elastic model for overconsolidated clay based on strain energy <i>C.C.Hird & N.D.Pierpoint</i>	67
On the mechanical response of gassy clays: Some theoretical considerations <i>M.Karstunen & G.N.Pande</i>	75
Nonlinear analysis of the coefficient of consolidation <i>P.Kuklik</i>	81
A slip line model based on plastic localization and discontinuous approximation <i>R.Larsson & K.Axelsson</i>	85

Constitutive model for unsaturated soils: Validation on a silty material <i>A. Modaressi & N. Abou-Bekr</i>	91
Hourglass properties of 4-node quad <i>F. Molenkamp, C.B. Sharma, E. Lewis & J.B. Sellmeijer</i>	97
The selection of the parameters for the modified cam clay analysis <i>A. Näätänen & M. Lojander</i>	105
On integration rules for triangles <i>D.J. Naylor</i>	111
Implementation of a two-fields f.e.m. for incremental laws in large deformations <i>P. Royis, H. Royis & F. Laouafa</i>	115
A numerical model for overconsolidated clays containing discontinuities <i>E. Sakellariadi & G. Scarpelli</i>	121
The influence of geometry and end restraint on the strength in triaxial compression in numerical simulations <i>T. Schanz & P. Gussmann</i>	129
An experimental and numerical investigation of the hydration of compacted powdered boom clay <i>H.R. Thomas, M.R. Sansom, G. Volckaert, P. Jacobs & M. Kumnan</i>	135
Numerical simulation of general 3D quasi-static shear deformation of granular media <i>C. Thornton & G. Sun</i>	143
Interfacial localisation in a granular medium modelled as a Cosserat continuum <i>P. Unterreiner & I. Vardoulakis</i>	149
Numerical modelling of cyclic mobility during undrained cyclic loading <i>P.K. Woodward</i>	157
<i>Thermo-mechanical properties</i>	
Finite element benchmarks for clays – The INTERCLAY II project <i>R.M. Jeffries & N.C. Knowles</i>	165
Thermo-hydro-mechanical modelling of an underground radioactive wastes disposal <i>M. Ould Amy & G. Rousset</i>	171
Heating unsaturated clay – An experimental and numerical investigation <i>H.R. Thomas, Y. He, A. Ramesh, Z. Zhou, M.V. Villar & J. Cuevas</i>	181
A parallel computing simulation of some experimental results of heat and moisture transfer in unsaturated soil <i>H.R. Thomas & C.L.W. Li</i>	187
<i>Tunnels and pipelines</i>	
FEM-analysis of Heathrow NATM trial tunnel <i>G.V. Atzl & J.K. Mayr</i>	195

Analysis of settlement damage to masonry structures <i>H.J.Burd, G.T.Housby, L.Chow, C.E.Augarde & G.Liu</i>	203
Steady finite-element method for analysis of advancing tunnels under non-uniform loading <i>C.Guo, D.Nguyen-Minh & S.Braham</i>	209
Lateral soil restraint of a buried pipeline <i>C.F.Ng, I.C.Pyrh & W.F.Anderson</i>	215
A model of interaction between tunnelling and a masonry structure <i>B.Simpson</i>	221
Calculation of tunnels in soft ground <i>I.Shahrour & S.Ghorbanbeigi</i>	229
Short term and long term settlements around a tunnel in stiff clay <i>S.E.Stallebrass, V.Jovičić & R.N.Taylor</i>	235
<i>Foundations</i>	
High-frequency response analyses of machine foundations <i>S.Bu & T.G.Davies</i>	243
Numerical modelling of dynamic experiments on dry sand beds using simple models <i>A.H.C.Chan, O.O.Familiyesh & D.Muir Wood</i>	249
Elastic settlements of circular footings on nonhomogeneous soils <i>E.Conte & G.Dente</i>	257
Stress path analysis of geotechnical structures <i>M.Doležalová, P.Venclík & V.Zemanová</i>	263
A numerical study on pile foundation of the 300 m high Commerzbank tower in Frankfurt am Main <i>R.Katzenbach, U.Arslan & J.Gutwald</i>	271
Numerical model of a piled foundation with respect to the stress history <i>H.Meißner & Y.L.Shen</i>	279
<i>Foundations and reinforced soil</i>	
Probabilistic validation of a numerical computing program for shallow foundation typical structure calculations <i>K.Touati & J.L.Favre</i>	287
Analysis of the use of membranes in oil tank foundations <i>H.J.Burd, G.T.Housby & C.J.Brocklehurst</i>	293
On the mechanical behaviour of sand reinforced with geotextiles <i>A.Cividini, M.Donelli & D.Sterpi</i>	299

Finite element analysis of stabilized peat and clay <i>O.Ravaska & E.Vesala</i>	305
Analyses of a nailed soil wall curved in plan <i>N.Su & I.M.Smith</i>	311
<i>Walls and slopes</i>	
Modelling of the sheet pile wall test in Karlsruhe 1993 <i>K.J.Bakker & R.C.A.Beem</i>	319
Practical computations of slope liquefaction <i>R.Boughrarou & M.A.Hicks</i>	325
Boundary conditions in the behaviour of large embankments <i>F.Colleseelli & G.Cortellazzo</i>	333
Limit state calculation of an anchored retaining wall <i>P.Gußmann & K.Weber</i>	341
Estimating the groundwater effects of a road cutting <i>J.P.Herva, R.V.V.Luoma & O.H.Nuutilainen</i>	345
Lateral pile response using a single finite element <i>S.Kay & C.Dobson</i>	351
A numerical study of delayed failure of excavations <i>S.Kirkebø, S.Nordal & G.Svanø</i>	355
Flow towards open excavations with bottom grouted seal <i>J.M.Sánchez-Alciturri, J.Cañizal & C.Sagaseta</i>	363
Deep excavations in soft soil – Finite element analysis and in-situ measurements <i>H.F.Schweiger</i>	369
Study on the active earth pressure with inclined surface and cohesive soil <i>K.Weber & P.Gußmann</i>	377
Elastic-plastic finite element analysis of an excavated slope in soft clay <i>Y.Yu, B.Westerberg & K.Axelsson</i>	383
<i>Rock mechanics</i>	
Evaluation of rock mass blockiness by using mathematic model <i>L.Iglarova</i>	391
Mathematical modelling of rock bolt system <i>J.Malik</i>	395
Numerical evaluation of effective moduli in brittle rocks with multiple interacting cracks <i>V.Renaud & D.Kondo</i>	401
Finite element analysis of the failure of a sandstone cave roof in Nottingham <i>K.Roodbaraky, H.Chen, A.C.Waltham & D.Johnson</i>	409

Numerical analysis of stability of waste disposals in salt rocks <i>V.V.Silberschmidt & V.G.Silberschmidt</i>	417
Development of an inverse back analysis code and its verification <i>P.Venclík</i>	423
Author index	431