

Sociedad Venezolana de Geotecnia

13th Panamerican Conference on Soil Mechanics and Geotechnical Engineering 2007

July 16-20, 2007
Margarita Island, Venezuela

Volume 1 of 2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-60560-376-6

Some format issues inherent in the e-media version may also appear in this print version.

Copyright (2007) by the Sociedad Venezolana de Geotecnia.

All rights reserved.

For permission requests, please contact the Sociedad Venezolana de Geotecnia at the address below.

Sociedad Venezolana de Geotecnia
Nucleo A. Piso 7
A75 Chacao Caracas
1060 4902 Venezuela
Telf/Fax: +58 212 571.3824

civ.svdg@gmail.com

Sociedad Venezolana de Geotecnia
13th Panamerican Conference on Soil
Mechanics and Geotechnical Engineering
2007

TABLE OF CONTENTS

VOLUME 1

Foundation Solution of the a New Alternative Viaduct for the highway Caracas-La Guaira	1
<i>Pedro Carrillo</i>	
Uncertainties and Approximations in Geotechnics	12
<i>E. Núñez</i>	
Correlation Between the Climatic Parameters and the Movements of a Footing Laid the Foundations on Expansive Rocks, to the Southwest of Ecuador	40
<i>Luis Marín-Nieto</i>	
Anchored Rock Foundation Design	45
<i>R. Terzariol, P. Arrúa, G. Aiassa</i>	
The Foundation and the Earthquake Resistant Design of the Potrerillos Dam	51
<i>Arnaldo M. Barchiesi, José F. Toso, Ascensio Lara, Alain J. Carrere</i>	
Soil-geosynthetic Interaction: Modelling and Analysis	N/A
<i>E. Palmeira</i>	
Elastic Settlement of Shallow Foundations on Granular Soil--an Overview	N/A
<i>B. Das</i>	
Model Pile Groups in Sand Subjected to Lateral Soil Movement	59
<i>Eng How Ghee, Wei Dong Guo</i>	
Back-analysis of Flight Auger Pile Load Tests in the Soil of Goiânia, Brazil	65
<i>M. M. Sales, R. P. Cunha, P. H. L. Magalhães</i>	
Design and Performance of Deep Steel Piles with Varied Section	71
<i>Alexandre Duarte Gusmão, Jaime De A. Gusmão Filho, Gilmar De Brito Maia</i>	
Tools to Forecast the Behavior of CFA Piles Founded in Tropical Soil	81
<i>G. J. M., Anjos, R. P. Cunha, A. M. Pando, M. E. Ruiz</i>	
Bearing Capacity of Irregular (triangular) Shaped Mudmat Foundations	86
<i>K. J. L. Stone, T. A. Newson, W. Vanadit-Ellis</i>	
Soil Structure Interaction in the Analysis and Seismic Design of Reinforced Concrete Frame Buildings	92
<i>Julio A. García</i>	
3D Numerical Analysis of Actual and Future Behavior of a Group of Buildings Constructed on Mexico City Lacustrine Clays	98
<i>N. P. López-Acosta, G. Auvinet, J. F. Rodríguez</i>	
Geogrid-reinforced and Pile-supported Roadway Embankment	108
<i>Reinaldo Vega-Meyer, Yong Shao</i>	

Installation of Micropiles, Steel H-piles and Drilled Shafts in Charlotte's Light Rail Construction	115
<i>Y. Huang, D. S. Lipka And M. Truzman</i>	
Probabilistic Design Procedure That Includes Pile-pinning for Bridge Foundations Undergoing Liquefaction Induced Lateral Spreading	122
<i>C. Ledesma, J. D. Bray</i>	
Design of the Foundation Retrofit and Monitoring Instrumentation for Bridge No. 91 Over the Yadkin River, North Carolina, USA	129
<i>M. Truzman, D. Corley, J. Fargher, T. Sherrill, D. Hardister</i>	
Dynamic Impedance Functions for Piers and Piles Embedded in Layered Media	135
<i>H. R. Aguilar, J. Avilés</i>	
Direct Foundations on Sand with Square Bases, a Proposal of Calculation.	143
<i>Augusto José Leoni</i>	
Probabilistic Settlement Analysis by Stochastic and Random Finite Element Methods	151
<i>D. V. Griffith, Gordon A. Fenton</i>	
Effect of Pile Diameter on Lateral Resistance in Sand from Full-scale Tests	162
<i>Kyle M. Rollins, Amy J. Taylor</i>	
Recent Developments in Reinforced Soil Wall Testing, Analysis and Design	N/A
<i>Richard Bathurst</i>	
Influence of Shear Zones on the Stability of Schist Rocks	N/A
<i>Alberto Marulanda</i>	
Behavior of Instrumented Continuous Flight Auger Piles in Sedimentary and Residual Soils	168
<i>P. J. R. De Albuquerque, D. De Carvalho, C. T. D. B. Alledí, U. F. Polido</i>	
Notes on Design of Micropiles As Foundation Elements	174
<i>Jesús Gómez, Allen Cadden, Javier Rodríguez</i>	
Modelling of Rigid Inclusions in Consolidating Soils	187
<i>G. Auvinet, J. F. Rodríguez</i>	
Numerical Modeling of Soil Deformation and Excess Pore Pressure Field around a Closed Ended Pile	195
<i>Juan F. P. Erri, Juan M. Pestana, Charles Aubeny</i>	
Octagonal Mat Foundation for Support of Heavy Ring Crane	201
<i>J. L. M. Clemente, M. Anderson</i>	
Development of Synthetic Ground Motions for the June 23rd 2001 Southern Peru Earthquake	208
<i>W. Silva, A. Rodriguez-Marek, J. Wartman</i>	
Infiltration of Compacted Silty Clay Loess Soil	214
<i>R. Terzariol, M. Zeballos, G. Aiassa</i>	
Constitutive Model Analysis for Silty Loess Soils	220
<i>G. Aiassa, M. Zeballos, R. Terzariol</i>	
A Constitutive Model for Sands: Evaluation of Predictive Capability	226
<i>A. Sfriso</i>	
Micro-scale Analysis of Immiscible Displacement in Porous Media	232
<i>F. M. Francisca, M. A. Montoro</i>	

Study of Suction in Unsaturated Soils Applied to Pavement Mechanics	238
<i>B. Silva, L. Motta, A. Vieira</i>	
Soil-water Retention of Curve Measured with Different Methods.....	245
<i>M. A. Alfaro Soto, O. M. Vilar</i>	
Evaluation of the Liquefaction Potential of the Fosfertil Gypsum.....	251
<i>Alexandre Gonçalves Santos, Paulo César Abrão, Marco Antônio Diniz, Juliana Fonseca Moura, Ludmila Magalhães E Souza</i>	
Evaluation of the Effects of the Grain Size Segregation in the Permeability of an Iron Tailing.....	257
<i>Alexandre Gonçalves Santos, Luís Fernando Martins Ribeiro, Ludmila Magalhães E Souza</i>	
Recent Considerations in Design of Filters for Earth Dams and Rock Barriers	N/A
<i>R. Flores</i>	
Bearing Capacity of Floating Precast Piles Driven in Clay Deposits	N/A
<i>F. L. Soares, R. Q. Coutinho, A. D. Gusmão</i>	
Role of Performance Monitoring in Risk Management	N/A
<i>Allen Marr</i>	
Evaluation of the Methodology for Determination of the Iron Content of an Iron Tailing.....	263
<i>Alexandre Gonçalves Santos, Luís Fernando Martins Ribeiro, Ludmila Magalhães E Souza</i>	
Geotechnical Characterization of the Calcareous Soil from a Landslide in Pernambuco, Brazil.....	269
<i>M. M. Silva, R. Q. Coutinho, W. A. Lacerda</i>	
The Use of Drill Cuttings As Pavement Material.....	275
<i>J. T. Araruna Jr., P. J. M. Pires, R. C. Vaqueiro</i>	
Influence of Curing Conditions on K₀ in an Artificially Cemented Soil	281
<i>A. P. S. Santos, N. C. Consoli, K. S. Heineck</i>	
Lateritic Behaviour of the Colluvial Soil from Campinas-SP-Brasil	287
<i>M. G. Miguel, P. J. R. De Albuquerque, G. S. De Azevedo, G. S. V. Da Silva, D. De Carvalho</i>	
Properties of Collapsibles Soils of Uberlândia- Brazil.....	293
<i>M. E. B. Rezende, L. C. G. árabe, N. Gaioto</i>	
Geotechnical Mapping for Septic Tank and Cesspool of the Manaus-am	300
<i>Antonio Henriques Bento, Wallace Vargas Roque</i>	
Three-dimensional Flow Analysis of Macusani Dam - Peru	306
<i>Jackeline Castañeda, Celso Romanel</i>	
Study of the Geometrical Condition of Mining Waste Beaches Obtained with the Use of the Hydraulic Deposition Simulation Equipment (HDSE).....	312
<i>H. Hernandez, A. Assís</i>	
Study of the Collapsibility of a Brasília Clay Due Contaminants Flow	318
<i>J. Silva, P. Murrieta, L. Tejada</i>	
Determination of Geotechnical Properties of Barreiras Formation Sediments in the Coast East of Rio Grande Do Norte - Brazil.....	324
<i>R. N. F. Severo, O. Freitas Neto, O. F. Santos Júnior</i>	
Geotechnical Aspects of Berth No. 4 Upgrade, Port of Bridgetown, Barbados.....	330
<i>M. Yogendrakumar, T. P. Fitzell, W. M. Gilmer</i>	

Modeling of the Redistribution of Loads Around Buried Square Culverts	336
<i>T. Newson, M. Kanungo, K. Stone</i>	
Use of Waste Materials to Improve the Seismic Resistance of Adobe	342
<i>M. S. Islam, M. Kanungo</i>	
Waste Rock Behavior at High Pressures.....	348
<i>Edgar Bard O., José Campaña Z., María Eugenia Anabalón A. Arcadis Chile, Reinaldo Apablaza V.</i>	
Numerical Modelling of Stress in Internal Erosion.....	354
<i>Ricardo Moffat C., Abelardo Julio A.</i>	
Soil Nailing: Practice and Research.....	N/A
<i>Alberto Sayão</i>	
Some Methods for the Improvement of the Geotechnical Properties of Slurried Mine Wastes	N/A
<i>Tim Newson</i>	
Hurricane Katrina – New Orleans Levee Damage Observations	N/A
<i>Francisco Silva</i>	
High Waste Rock Dumps in the Mining Industry.....	360
<i>L. Valenzuela, E. Bard, J. Campaña</i>	
Applicability of the H/V Spectral Ratio in the Seismic Response of the Santiago Basin, Chile.....	366
<i>R. Verdugo, C. Pastén</i>	
Cyclic Behavior of Bogotá Unbound Aggregates	372
<i>B. Caicedo, O. Coronado, J. M. Fleureau, A. Gomes Correia</i>	
A Geotechnical Model for the Subsoil of the Bogotá Sabana.....	378
<i>J. A. Rodríguez, J. P. Escallón</i>	
Influence of Expansive Potential on Final Settlements Predictions in Constructions	384
<i>M. L. Pérez-Rea, T. Ayala-Ibarra</i>	
Drained Behaviour Description for the Weald Clay.....	389
<i>R. Rivera-Constantino, E. Juárez-Badillo, A. Herrera-Canseco</i>	
Effects of Drying Soils in Light Buildings	397
<i>J. L. Rangel-Núñez, E. Ibarra-Razo, N. Contreras-Pallares</i>	
Effects of Microfossils on the Soils Behavior.....	403
<i>J. A. Díaz-Rodríguez, O. E. Nava-Tristán</i>	
The New Geotechnical Map for Mexico Valley Subsoil.....	410
<i>M. Juárez, G. Auvinet, E. Méndez</i>	
Study on Dispersivity and Erodibility of Clayey Soils	416
<i>G. Silva G-P, J. Rendón H.</i>	
Influence of Non-saturation and Particle Size Distribution on the Stiffness of Granite Materials	424
<i>A. Gomes Correia , S. M. Reis Ferreira, J-M. Fleureau</i>	
The Geotechnical Re-use of Portuguese Inert Siderurgical Aggregate.....	429
<i>A. J. Roque, Eduardo Fortunato, A. Gomes Correia, S. M. Sandra Ferreira, Fernando Pardo De Santayana, Fernando Castro, Luísa Trigo</i>	
Geotechnical Studies in the Esplanade of the M´Bopicuá Pulp Mill (Uruguay)	435
<i>A. Gutiérrez, V. Umpiérrez</i>	

An Energy-flux Solution to Clear-water Scour of a Circular Pier	440
<i>M. Falcón, E. Hernández</i>	
Modeling of the Dynamic Properties of Compacted Saturated Soils	444
<i>C. M. González-Blandón, O. Flores-Castrellón, M. P. Romo-Organista, C. Dorado-Santana</i>	
Geotechnical Rehabilitation on Home Buildings in México City	450
<i>H. S. Haas</i>	
General Theoretical Equations for Cyclic Shear Response of Granular Soils	456
<i>E. Juárez-Badillo</i>	
Mathematical Characterization of the Compression to 100,000 kg/cm² of Thirty-two Substances	463
<i>E. Juárez-Badillo, S. Hernández-Mira</i>	
Influence of Dessiccation on Volume Change Behavior of Bogota Clay	469
<i>J. A. Pineda-Jaimes, J. E. Colmenares-Montañez</i>	
Study of Geologic Risks at the Hydrographic River Basin of the River El Limón. Aragua State, Venezuela	475
<i>K. Briceño, Y. Sánchez, M. Uzcátegui, L. González</i>	
Use of Tubular Geocompounds in the Protection of Coastal Areas.	480
<i>C. Blanco Sirit, M. Prieto, E. Alió</i>	
Undergraduate Thesis on the Teaching Learning Process of Geotechnical Engineering	485
<i>J. J. Bosio</i>	

VOLUME 2

Asunción City Geotechnical Map	490
<i>N. Cantero, L. Lugo, L. Ramírez, R. Gómez, L. Amábile, R. Franco</i>	
Physical and Numerical Modeling of a Pipeline Shallowly Buried in Sandy Soil Subjected to Lateral Load	496
<i>M. C. F. Almeida, M. S. S. Almeida, L. A. Pacheco, J. R. M. S. Oliveira, R. Garske</i>	
Mechanical Behavior of an Artificially Cemented Soil Cured Under Stress	502
<i>F. D. Rosa, N. C. Consoli, K. S. Heineck</i>	
Secondary Consolidation of Marine Clays Revealed by Measured Building Settlements in Santos and São Vicente, Brazil	507
<i>F. Massad</i>	
Correlation Between the Maximum Shear Modulus and the Undrained Strength of a Remolded Marine Clay	514
<i>José Maria De Camargo Barros, Rosana Marília Da Silva Silveira, Cláudio Dos Santos Amaral</i>	
Numerical Simulation of the Behavior of Central Core Dams Using Soil-emulsion Mix	520
<i>E. C. Jacintho, M. M. Farias, M. P. Cordão Neto, J. Camapum De Carvalho, R. C. Guimarães</i>	
Geotechnical Characteristics of Primary and Secondary Leach Copper Ore	526
<i>J. Campaña, E. Bard, M^a. E. Anabalón, R. León</i>	

Soil-structure Interaction Analysis Using Finite Element Method. Case of Study: La Cabrera Tunnel and Viaduct	532
<i>Z. Arana, L. González, M. Elberg</i>	
Simulation of the Geological Risk Areas in the Costal Strip of the Carabobo State, Venezuela	538
<i>G. Sosa, M. Alam, M. Elberg</i>	
Integration of Education, Investigation and Practice Through of Geotechnical Case	544
<i>G. Moreno</i>	
Machine Learning for Soil Dynamic Characterization	551
<i>E. Rojas-Toledo, S. García-Benítez, E. Ovando-Shelley</i>	
Modelo Constitutivo Para Suelos Granulares Gruesos: Determinación Experimental De Parámetros	557
<i>P. A. Arias-García, A. Lizcano</i>	
Some Geotechnical Characteristics of the Tephra in the West of Ecuador	563
<i>Desirée Marín- Esteves</i>	
Geotechnical Aspects of the June 23rd 2001 (Mw=8.4) Southern Perú Earthquake	569
<i>E. Rondinel-Oviedo, A. Rodriguez-Marek, J. Wartman, J. Zegarra-Pellanne, P. Repetto</i>	
Shrink-swell and Cracking of Sand-bentonite Mixes with EPS Inclusion	576
<i>H. K. Illuri, A. Nataatmadja</i>	
Behavior of Plate Tests Bearing on Fiber-reinforced Sand	582
<i>M. D. T. Casagrande, N. C. Consoli, A. Thomé</i>	
Engineering Properties of Brazilian Steel Slag for Road Constructions	587
<i>K. V. Bicalho, R. R. Castello, C. O. Raposo, M. G. Silva, F. U. Oliveira</i>	
Use of Lime and Fibres in the Improvement of Materials for Use in Structures of Pavements	592
<i>P. F. Bento, J. Camapum De Carvalho</i>	
Some Engineering Characteristics of Residual Lateritic Soil Stabilized with Fly Ash and Lime	598
<i>Baleshwar Singh, Rajib Kumar Goswami</i>	
Rigid Inclusions in Mexico City Soft Soils	602
<i>J. F. Rodríguez, G. Auvinet</i>	
Dynamic Properties of EPS Under Different Confining Stress Conditions	610
<i>A. Ossa-López, M. P. Romo</i>	
Geogrid-reinforced Roadway Embankment on Soft Soils: a Case Study	617
<i>Reinaldo Vega-Meyer, Roberto Sosa Garrido, Alberto Ramírez Piedrabuena, Ignacio Narezo Larios, Ramón Pico Lapuente</i>	
Soft Ground Improved by Rigid Vertical Piles. Experimental and Numerical Study of the Carrières-sous-poissy (france) Case	627
<i>M. A. Nunez, D. Dias, R. Kastner, C. Poilpré</i>	
Construction of a Field of Test for a Unique Curtain of Jet Grouting in the World	633
<i>R. Saleh, M. Miceli, R. Luna</i>	
Laboratory and Field Investigation of Land Subsidence Under Cyclic Load	642
<i>M. M. Toufigh, A. Ouria</i>	
Laboratory Deep Soil Mixing Protocol for Stabilizing Expansive Soils	649
<i>V. Bhadriraju, A. J. Puppala, R. S. Madhyannapu, R. Williammee</i>	

Jet Grouting Solutions for Caracas Subway Line 4 – Challenges in Urban Projects	655
<i>G. Guatteri, A. Koshima, A. Ravaglia, M. Duarte</i>	
Recycled Aggregate of Construction and Demolition Waste in Base and Subbase of Pavements in São Paulo - Brazil: Case Study	661
<i>L. L. B. Bernucci, F. C. Leite, R. S. Motta, M. R. Abdou</i>	
Influence of the Disturbed Zone on Consolidation Aided by Prefabricated Vertical Drains	666
<i>P. Basu, D. Basu, M. Prezzi, A. V. D. Bica</i>	
A Simple Procedure for the Determination of the Shear Strength Envelope of Unsaturated Soils: Experimental Results and Numerical Validation	672
<i>Y. Valencia, M. Santos, J. Camapum De Carvalho, M. Farias, G. Gitirana Jr.</i>	
Local and Global Measurement of Strains in Triaxial Cell: Influence of Soil Conditions	678
<i>J. Capdevila, V. Rinaldi</i>	
Identification, Classification and Evaluation of Soil Collapsibility by Ménard Pressuremete	686
<i>K. C. A. Dourado, R. Q. Coutinho</i>	
Unconfined Compression Tests with Suction Control Using the Osmotic and Axis Translation Technique.....	693
<i>M. A. Alfaro Soto, O. M. Vilar</i>	
Filter Paper Method of Soil Suction Measurement.....	699
<i>K. V. Bicalho, A. Gomes Correia, S. Ferreira, J-M Fleureau, F. A. M. Marinho</i>	
Cross-hole and SCPT Tests in a Tropical Soil from Campinas-SP, Brazil.....	704
<i>H. L. Giacheti, A. S. P. Peixoto, G. De Mio</i>	
Helical Probe Test in Tropical Sandy Soil: Preliminary Results	711
<i>A. S. P. Peixoto, F. Pernomian, V. B. Antenor, H. L. Giacheti</i>	
Laboratory Verification of Gas Hydrate-sediment Response	718
<i>J. L. H. Grozic, T. J. Kvalstad</i>	
Characterization of a Layered Soil Model in Centrifuge Using Spectral Techniques	724
<i>C. Murillo, B. Caicedo, L. Thorel, J. Garnier</i>	
Strain Rate and Overconsolidation Ratio Effect in a México City Clay.....	731
<i>R. Rivera-Constantino, E. Juárez-Badillo, J. L. López-Carbajal</i>	
Shaking Table Determination of Sliding–friction Time Histories at Interfaces	739
<i>Bogart Méndez, Eduardo Botero, Juliana Zapata, Miguel Romo</i>	
Uncertainty of Measurement in Soil Mechanics Test.....	744
<i>H. Delgado, I. Martínez</i>	
Prediction of Moisture and Stress Effects on Resilient Modulus Using Soil Suction Concept.....	751
<i>Robert Y. Liang, Samer Rabab'Ah</i>	
Evaluation of Enhanced Integrated Climatic Model Predictions Over Different Permeable Base Materials.....	757
<i>Robert Y. Liang, Samer Rabab'Ah, Madhar Taamneh</i>	
The Role of the Seismic Refraction Prospecting in the Geotechnical Design	763
<i>R. Di Francesco, M. Siena, R. M. Di Francesco T</i>	

Use of Inverse Analysis on in Situ Measurements During the Construction of the Bois De Peu Tunnel (france)	769
<i>S. Eclaircy-Caudron, D. Dias, R. Kastner</i>	
Correlation Between the Geotechnical Parameters of the Static Cone Penetrometer (CPT) and the Flat Dilatometer of Marchetti (DMT)	775
<i>M. Tapia G, M. A. Tapia U.</i>	
Exploración Geotécnica - Geofísica Del Subsuelo Y Modelado Dinámico De Suelos En La Cuenca Sedimentaria De Caracas	783
<i>M. González , M. Tagliaferro , M. Schmitz , A. Hernández , Y. Flores, J. Hernández, E. Parra, A. Pérez</i>	
9-m Column Testing of Colloidal Silica Transport Through Porous Media	788
<i>Y. Lin, P. M. Gallagher</i>	
Variables That Affects Fluorescents Tracers Used in Hydrogeologist Studies	794
<i>J. Carrillo, M. Uzcáteguí. S, Hernández. G. Vivas</i>	
Soil Air Voids Method for Geoconstruction Compaction Control	800
<i>R. L. Mokwa</i>	
Comparison of Two Reconsolidation Methods for Mitigating Sample Disturbance in a Natural Clay	806
<i>Tanay Karademir, Thomas C. Sheahan</i>	
The PANDA Penetrometer: a New Alternative for the Compaction Control of Tailing Dams	812
<i>Espinace, R. Palma, J. Peña, A., Villavicencio, G., Bossier, D. Bacconnet, C, Gourvés, R.</i>	
Protection of Railway-lines Against Natural Hazards	818
<i>P. Schwizer, M. Denk, R. De Stefano, G. Marcacci</i>	
Behavior of Coarse Alluvium Slopes Subjected to Earthquakes	824
<i>E. Núñez.</i>	
The Empirical Methods for Stability Analysis in Total Tensions for Embankments on Soft Soils	830
<i>Roberto Quental Coutinho, Maria Isabela Marques Da Cunha V. Bello</i>	
Geotechnical Behaviour of Shales at the Colombian Andes	836
<i>J. Montero-olarte, M. C. Torres-suárez</i>	
Probabilistic Estimation of Vulnerability to Landslides	844
<i>M. Uzielli, S. Lacasse</i>	
The Influence of the Unsupported Length in Face Stability	850
<i>A. Costa, A. Silva Cardoso, J. Almeida E Sousa</i>	
Response of the Vallcebre Landslide to Rainfall Events	856
<i>D. A. González, A. Ledesma, J. Corominas, J. Moya</i>	
Wall Installation Effects of Excavation Support Systems	862
<i>L. S. Bryson, D. G. Zapata-Medina</i>	
Continuous Concrete Cut-off Excavated with Hydromill	868
<i>Colombo Biserna, Piero Sembenelli, Rubén E. Luna</i>	
Statistical Summary of Rock Mass Characterization from Tunnels of the Caracas-tuy Medio Railroad Project	877
<i>M. Truzman</i>	
Soil Nail Walls in the Slope Stabilization	883
<i>M. Tapia G, M. A. Tapia U</i>	

The Mechanism of Soil Arching in Drilled Shafts for Slope Stabilization.....	889
<i>M. Tapia</i>	
Methodology for the Primary Evaluation of Slopes of Cut in Soils	896
<i>F. Manuel, Q. Brito</i>	
Use of Micropiles for Slope Stabilization	906
<i>C. M. Englert, J. E. Gómez , H. D. Robinson</i>	
Determination of the Most Probable Slip Surface in 3D Slopes Using Non-linear Programming Techniques.....	912
<i>M. M. Toufigh, A. R. Ahangarar, A. Ouria</i>	
Excavation of Basements in Coarse-grained Soils Using the Observational Method.....	918
<i>A. Carrillo Gil, E. Carrillo D., O. Donayre C., I. Vera A.</i>	
Relationship of Inferred Soil Behavior to Excavation Instrumentation.....	926
<i>C. Marulanda, Y. M. A. Hashash</i>	
Qualitative Determination of Geological Risks with Analysis of Geomorphologic Settings Asociated to Landslides Inside Middle Basin of Chama River. Mérida State, Venezuela.....	933
<i>O. Ávila, M. Morales, O. Guerrero</i>	
Efectos De Arqueamiento En Un Terraplén Sobre Suelo Piloteado Por Medio De Análisis Numéricos Bidimensionales y Tridimensionales	939
<i>Sandra Patricia Echeverría Fernández, Márcio Muniz De Farias</i>	
Plan of Risk Reduction of Erosion / Landslide in an Area of Camaragibe City /Pernambuco	944
<i>Ana Patrícia N. Bandeira, Roberto Q. Coutinho, Margareth M. Alheiros, Alexandre Duarte Gusmão</i>	
Stability of a Concave Slope Considering 3D Conditions	950
<i>J. Camapum De Carvalho, Y. Valencia, M. Santos, G. F. N. Gitirana Jr.</i>	
Three-dimensional Analysis of Concrete Faced Rockfill Dams.....	956
<i>A. Frutuoso, A. Assis, M. Farias, M. Cordão Neto B.</i>	
Influence of the Local Effects in the Seismic Answer of Vertical Structures Using Geomechanic Simulation	961
<i>M. Elberg, R. Torres, E. Infante</i>	
Determination of Probability of Failure in Slope Rock Masses Considering Plane Rupture	968
<i>Roberto Ucar Navarro</i>	
Research and Development on Flexible Debris Flow Barriers	976
<i>P. Schwizer, M. Denk, R. De Stefano, G. Marcacci</i>	
Panama Chanel Upgrade Program.....	N/A
<i>Maximiliano De Puy</i>	
Argentinian Reglament for Geotechnical Studies (Under Revision)	N/A
<i>Roberto Terzariol</i>	
Special Lecture:	N/A
<i>Rolando Armas</i>	
Landslides Risk Management in Urban Area.....	N/A
<i>Roberto Coutinho</i>	

**Influence of an Alkaline Fluid on Physical-chemical-mineralogical Characteristics
and on Shear Strength in a Colluvium Soil from Poços De Caldas-Mg-brazil.....** N/A
*Taíse Monique De Oliveira Carvalho, Tácio Mauro P. De Campos, Mónica Priscilla
Hernandez Moncada, Franklin Dos Santos Antunes*

Author Index