

BIBLIOGRAFIA

- Adams B.A., Wulfsohn D., Fredlund D.G. 1996. Air Volume Change Measurement in Unsaturated Soil Testing Using a Digital Pressure-Volume Controller. *Geotechnical Testing Journal*, 19(1), pp. 12-21.
- AGI 1994. Raccomandazioni sulle prove geotecniche di laboratorio.
- Aitchinson G.D. e Woodburn J.A. 1969. Soil suction in foundation design. *Proc. VII ICSMFE*, Mexico, 2, pp. 1-8.
- Alonso, E.E. 1998. Modelling expansive soil behaviour. Keynote lecture, *Proc. II Int. Conf. on Unsaturated Soils*, UNSAT '98, Beijing, China, vol. 2, pp. 37-70.
- Alonso E.E. e Oldecop L.A. 2000. Fundamentals of rockfill collapse. Keynote lecture. *Asian Conference on Unsaturated Soils*, Singapore, 1, pp. 3-14.
- Alonso E.E., Gens A. e Gehling W.Y.Y. 1994. Elasto-plastic model for unsaturated expansive soils – *Proc. 3th Eur. Conf. Num. Meth. Geot. Eng.*, Manchester, 1, pp. 11-18.
- Alonso, E.E., Gens A. e Hight D.W. 1987. Special problem soils. General report. *Proceedings of the IX ECSMFE*, Dublin, 3, pp. 1087-1146.
- Alonso, E.E., Gens A. e Josa A. 1990. A constitutive model for partially saturated soils. *Géotechnique* 40(3), pp. 405-430.
- Alonso, E.E., Josa, A., e Gens A. 1992. Modelling the behaviour of compacted soils upon wetting. *Roul Marsal volume*, S.M.M.S. Mexico, 3, pp. 207-223.
- Alonso, E.E., Lloret, A., Gens, A. e Yang, D.Q. 1995. Experimental behaviour of highly expansive double-structure clay. *Proc. I Int. Conf. on Unsat. Soils*, UNSAT 95, Paris, 1, 11-16
- Anderson D.G. e Stokoe K.H. 1978. Shear modulus: a time-dependent material property. *Dynamic geotechnical testing*, ASTM STP 654, pp. 66-90.
- ASTM D421-58. Standard Method for dry preparation of soil samples for particle-size analysis and determination of soil constants.
- ASTM D422-63. Standard Method for particle-size analysis of soils. Philadelphia, USA.
- ASTM D4318-84. Standard Method for liquid limit, plastic limit and plasticity index of soils. Philadelphia, USA.

ASTM D698-91. Test method for laboratory compaction characteristics of soil using standard effort (12,400 ft·lbf/ft³ (600 kN·m/m³)), Philadelphia, USA.

ASTM D1557-91. Test method for laboratory compaction characteristics of soil using modified effort (56,000 ft·lbf/ft³ (2700 kN·m/m³)), Philadelphia, USA.

ASTM D2487-93 – Standard test Method for classification of soils for engineering purposes

Atabek R.B., Felix. B., Robinet J.C. e Lahlou R. 1991. Rheological behaviour of saturated expansive clay materials. Workshop on Stress Partitioning in Engineered Clay Barriers, Duke University, Durham, New Castle

Au W.C. e Chae Y.S. 1980. Dynamic shear modulus of treated expansive soils. Journal Geotech. Eng. Div. ASCE, 106, GT3, pp. 255-273.

Balmaceda A.R. 1991. Suelos compactados. Un estudio teórico y experimental. Tesis doctoral. Universitat Politècnica de Catalunya, Barcelona, Spain.

Bao C.G., Gong B.W. e Zhan L.T. 1998. Properties of unsaturated soils and slope stability of expansive soils. Keynote lecture, *Proc. II Int. Conf. on Unsaturated Soils*, UNSAT '98, Beijing, China, vol. 2, pp. 71-98.

Barbour S.L. 1998. Nineteenth Canadian Geotechnical Colloquium: The soil-water characteristic curve: a historical perspective. Canadian Geotechnical Journal, 35, pp. 873-894.

Barden L. e Pavlakis G. 1971. Air and water permeabilities of compacted unsaturated cohesive soil. Journ. of Soil Science, 22(3), pp. 302-318.

Barden L. e Sides G.R. 1971. Engineering behaviour and structure of compacted clay. Journal of Soil Mechanics and Foundations Division, ASCE. 96:SM4, pp. 1171-1197.

Barden L., Mador O.A. e Sides G.R. 1969. Volume change characteristics of unsaturated clay. Journ. Soil Mech. Found. Div. ASCE, SM1, pp. 33-51.

Barrera M. 2002. Estudio experimental del comportamiento hidro-mecánico de suelos colapsables. Tesis Doctoral. Universitat Politècnica de Catalunya, Barcelona, Spain.

Baumgartl T., Winkelmann P., Graesle W., Richards B.G. e Horn R. 1995. Measurement of the interaction of soil mechanics properties and hydraulic processes with a modified triaxial test. I Int. Conf. on Unsaturated Soils, Paris, 2, pp. 433-438.

Bishop, A. W. 1959. The principle of effective stress. Teknisk Ukeblad. 39, pp. 859-863.

Bishop A.W. e Blight G.E. 1963. Some aspects of effective stress in saturated and partially saturated soils, *Géotechnique*, 13(3), pp. 177-197.

Bishop A.W. e Donald I.B. 1961. The experimental study of partly saturated soils in the

- triaxial apparatus. Proc. 5th Int. Conf. Soil Mech. Found. Eng. 1, pp. 13-21
- Bishop A.W. e Henkel D.J. 1962. The measurement of soil properties in the triaxial test. Edward Arnold, London.
- Bishop A.W. e Wesley L.D. 1975. A hydraulic apparatus for controlled stress path testing. *Géotechnique*, 25(4), pp. 657-670.
- Bocking K.A. e Fredlund D.G. 1980. Limitations of the axis translation technique. IV Int. Conf. on Expansive Soils, Denver, 1, 117-135.
- Bolzon G., Schrefler, B.A. e Zenkiewicz O.C. 1996. Elastoplastic soil constitutive laws generalized to partially saturated states. *Géotechnique*, 46(2), pp. 279-289.
- Booth A.R. 1975. The factors influencing collapse settlements in compacted soils. Proc. VI Reg. Conf. for Africa on Soil Mech. and Found. Eng., Durban, 1, pp. 57-63.
- Booth A.R. 1977. Collapse settlements in compacted soils. CSIR Research Report 324, NITRR Bulletin 13, Pretoria.
- Brooks R.H., Corey A.T. 1964 - Hydraulic properties of porous media. Colorado State Univ. Hydrol. Paper, 3(27).
- Brull A. 1980. Caracteristiques mécaniques de sols de fondation de chaussées en fonction de leur état d'humidité et de compacité. Int. Conf. On Compaction, Paris, 1, pp. 113-118.
- Buisson M.S.R. e Wheeler S.J. 2000. Inclusion of hydraulic hysteresis in a new elasto-plastic framework for unsaturated soils. Proc. of an International Workshop on Unsaturated Soils, Trento.
- Burland J.B. 1965. some aspects of the mechanical behaviour of partly saturated soils. In *Moisture Equilibria and Moisture Changes in the Soil Beneath Covered Areas*, A Symposium in Print, Aitchinson G.D. Ed., Australia, Butterworths, pp. 270-278.
- Burland J.B. 1989. "Small is beautiful": the stiffness of soils at small strains. IX Laurits Bjerrum Memorial Lecture. *Canadian Geotechnical Journal*, 26, pp. 499-516.
- Burland J.B. e Ridley A.M. 1996. General report. The importance of suction in soil mechanics. I Asian Conf. on Unsaturated Soils, Kuala Lumpur.
- Cabarkapa Z., Cuccovillo T. e Gunn M. 1998. A new triaxial apparatus for testing unsaturated soils. *Proc. II Int. Conf. on Unsaturated Soils. UNSAT '98*, Beijing. China, vol. 2, pp. 194-195.
- Cabarkapa Z., Cuccovillo T., e Gunn M. 1999. Some aspects of the pre-failure behaviour of unsaturated soil. *Proc. II Int. Conf. on pre-failure behaviour of geomaterials*, vol. 1, pp. 159-165.

- Carvalho L.C. 2001. Estudio experimental del comportamiento mecánico de un suelo cementado no saturado. Tesis Doctoral. Universitat Politècnica de Catalunya, Barcelona, Spain.
- Casagrande A. 1936. The determination of the pre-consolidation load and its practical significance., *Proc. I ICSMFE*, Harvard University Cambridge, Massachussett, vol. 3, D-34, pp. 60-64.
- Chan C.K. e Duncan J.M. 1967. A new device for measuring volume change and pressures in triaxial tests on soils. *Materials Research and Standards*, 7(7), pp. 312-314.
- Chen A.T.F. e Stokoe K.H. 1979. Interpretation of strain dependent modulus and damping from torsional tests. Report No. USGS-GS-79-002, NTIS No. PB-298479, U.S. Geological Survey, Menlo Park, California.
- Chen Z.H., Fredlund D.G. e Gan J.K.M. 1999. Overall volume change, water volume change, and yield associated with an unsaturated compacted loess. *Canadian Jeotechnical Journal*, 36, pp. 321-329.
- Childs E.C. 1940. The use of soil moisture characteristics in soil studies. *Journal of Soil Science*, 50, pp. 239-252
- Childs E.C. 1969. An introduction to the physical basis of soil water phenomena. Wiley Interscience, Wiley & sons, Toronto.
- Chu T.Y. e Mou C.H. 1973. Volume change characteristics of expansive soils determined by controlled suction tests. *Proc. III Int. Conf. on Expansive Soils*, Haifa, 1, 177-185.
- Clayton C.R.I., Khatrush S.A., Bica A. e Siddique A. 1989. The use of Hall effect semiconductors in geotechnical instrumentation. *Geotechnical Testing Journal*, 12(1), pp. 69-76.
- CNR UNI 10014, 1964. Determinazione dei limiti di consistenza (o di Atterberg) di una terra. Prove sulle terre.
- Croney D., Coleman J.D., Black W.P.M. 1958. studies of the movement and distribution of water in soil in relation to highway design and performance. *HRB Spec. Report 40*, Washington D.C., pp. 226-252.
- Cuccovillo T. e Coop M.R. 1997. The measurement of local axial strains in triaxial tests usling LVDTs. *Géotechnique*, 47(1), pp. 167-171.
- Cui Y. e Delage P. 1996. Yielding and plastic behaviour of unsaturated silts. *Géotechnique*, 46(2), pp. 115-126.
- Cui, Y.J., Yahia-Aissa M., e Delage P. 1998. A model for the volume change behaviour of

- heavily compacted swelling clays. Proc. 5th International Workshop on Key Issues in Waste Isolation Research, Barcelona, Spain.
- d'Onofrio A. 1992. Prove di torsione ciclica e dinamica su un terreno granulare costipato e addizionato con bentonite. Tesi di laurea, Univ. di Napoli Federico II
- d'Onofrio A. 1996. Comportamento meccanico dell'argilla di Vallericca in condizioni lontane dalla rottura. Tesi di dottorato, Università degli Studi di Napoli "Federico II".
- Davis S.C. 1972. Electronic volume change and flow rate devices. M. Sc. Thesis, Massachussets Institute of Technology, Cambridge, Mass.
- De Campos T.M.P. e Carrillo C.W. 1995. Direct shear testing on an unsaturated soil from Rio de Janeiro. I Int. Conf. on Unsaturated Soils, Paris, pp. 31-38.
- Delage P. e Graham J. 1995. Mechanical behaviour of unsaturated soils. Proc. I Int. Conf. Unsaturated Soils, Paris, 3, pp. 1223-1256.
- Delage P., De Silva S.G.P.R. e De Laure E. 1987. Un nouvel appareil triaxial pur les sols non-satures. IX Eur. Conf. Soil Mech. Found. Eng., Dublino, 1, pp. 25-28
- Delage P., Vicol T. e De Silva S.G.P.R. 1993. Suction controlled testing of non-saturated soils with an osmotic consolidometer. 7th Int. Conf. On Expansive Soils, Dallas.
- Delage P., Audiguier M., Cui Y.J. e Howat M.D. 1996. Microstructure of a compacted silt. Canadian Geotechnical Journal, 33, pp. 150-158.
- Diamond D.S. 1970. Pore size distribution in clays. Clays and Clay minerals 19, pp. 7-23.
- Diamond D.S. 1971. Microstructure and pore structure of impact-compacted clays. Clays and Clay minerals, 19, pp. 239-249.
- Di Benedetto H. e Tatsuoka F. 1997. Small strain behaviour of geomaterials: modelling of strain effects. Soils and Foundations, 37(2), pp. 127-138.
- Di Maio C. 1996 - Exposure of bentonite to salt solution: osmotic and mechanical effects. Géotechnique, 46(4), pp. 695-707.
- Di Maio C. e Fenelli G.B. 1994. Residual strength of kaolin and bentonite: the influence of their constitutive pore fluid. Géotechnique, 44(4), pp. 217-226.
- Dineen K. 1997. The influence of soil suction on compressibility and swelling. PhD Thesis, Imperial College, London, U.K.
- Dineen K. e Burland J.B. 1995. A new approach to osmotically controlled oedometer testing. Proc. I Int. Conf. on Unsaturated Soils, Paris, 2, pp. 459-465.
- Elsbury B.R., Daniel D.E., Sradars G.A. e Anderson D.A. 1990. Lesson learned from compacted clay liner. Journal of Geotechnical Engineering, ASCE, 116(11), pp. 1641-

1660.

- Escario V. e Juca J.E.T. 1989. Strength and deformation of partly saturated soils. Proc. 12th Int. Conf. Soil Mech. FounD. Eng., Rio de Janeiro, 1, pp. 43-46.
- Escario V. e Saez J. 1973. Measurement of properties of swelling and collapsing soils under controlled suction. Proc. 3rd Int. Conf. Expansive Soils, Haifa, Israel, 1, pp.195-200.
- Escario V. e Saez J. 1986. The shear strength of partly saturated soils. Géotechnique, technical note, 36(3), pp. 453-456.
- Esposito C. e Gaeta C. 1995. Simulazione numerica di prove torsionali e triassiali con analisi f.e.m. di tipo non lineare. Tesi di Laurea. Università degli Studi di Napoli Federico II.
- Fisher R.A. 1926. On the capillary forces in an ideal soil, *Journal Agr. Science*, 16, pp. 492-505.
- Floreau J.M. e Taibi S. 1995. Water-air permeabilities of unsaturated soils. I Int. Conf. Unsat. Soils, Paris, 2, pp. 479-484.
- Fredlund D.G. 1973. Volume change behaviour of unsaturated soils. Ph. D. Dissertation. Univ. Of Alberta, Edmonton, Alta., Canada.
- Fredlund D.G. 1975. A diffuser air volume indicator for unsaturated soils. Can. Geotech. Journ., 12, pp. 533-539.
- Fredlund D.G. 1979. Appropriate concepts and technology for unsaturated soils. Canadian Geotechnical Journal, 12, pp. 121-139.
- Fredlund D.G. 1995. The scope of unsaturated soil mechanics: An overview. I International Conference on Unsaturated Soils, Paris, 3, pp. 1155-1177.
- Fredlund D.G. 1998. Bringing unsaturated soil mechanics into engineering practice. II International Conference on Unsaturated Soils, Beijing, vol. 2, pp. 1-36.
- Fredlund D.G. e Morgenstern N.R. 1976. Constitutive relations for volume change in unsaturated soils. Canadian Geotechnical Journal, 13, pp. 261-276.
- Fredlund D.G. e Morgenstern N.R. 1977. Stress state variables for unsaturated soils, *Journal Geotech. Eng. Div., ASCE*, 103(5), pp. 447-466.
- Fredlund D.G., Morgenstern N.R. e Widger R.A. 1978. The shear strength of unsaturated soils. Canadian Geotechnical Journal, 15(3), pp. 313-321.
- Fredlund D.G. e Rahardjo H. 1993. Soil Mechanics for Unsaturated Soils. Wiley & sons, Toronto.
- Fredlund D.G. e Xing A. 1994. Equations for the soil-water characteristic curve. Canadian Geotechnical Journal, 31, pp. 521-532.

- Fredlund D.G., Rahardjo H. 1985. Theoretical context for understanding unsaturated residual soil behaviour. Proc. I Int. Conf. On Geomech. In Tropical, Lateritic and Saprolitic Soils, Brasilia, 1, pp. 295-306.
- Gallipoli D., Gens A. e Vaunat J. 2003. An elasto-plastic model for unsaturated soils incorporating the effect of suction and degree of saturation on mechanical behaviour. Accettato per la pubblicazione su: *Géotechnique Symposium in Print* "Suction in Unsaturated Soils".
- Gan J.K.M. e Fredlund D.G. 1996. Shear strength characteristics of two saprolitic soils. *Canadian Geotechnical Journal*, 33, pp. 595-609.
- Gan J.K.M., Fredlund D.G. e Rahardjo H. 1988. Determination of shear strength parameters of unsaturated soils using direct shear test. *Canadian Geotechnical Journal*, 25, pp. 500-510.
- Gasmo J.M., Rahardjo H., Deutscher M.S. e Leong E.C. 2000. Preliminary assessment of slope stability with respect to rainfall-induced slope failures. Proc. Asian Conference Unsaturated Soils, Singapore, 1, pp. 783- 788.
- Geiser F. 2000. Comportement mécanique d'un limon non saturé. Etude Expérimentale et modélisation constitutive. Thèse de Doctorat, École Polytechnique Fédérale de Lausanne.
- Gens A. e Alonso E.E. 1992. A model for the behaviour of unsaturated expansive clays. *Canadian Geotechnical Journal*, 29, pp. 1013-1032.
- Gens A. e Romero E. 2000. Ensayos de laboratorio. Simposio sobre geotecnica de las infraestructuras del transporte, . Universitat Politècnica de Catalunya, Barcelona, Spain, pp. 17-43.
- Gens A., Alonso E.E., Suriol J. e Lloret A. 1995. Effects of structure on the volumetric behaviour of a compacted soil. 1st Int. Conf. on Unsaturated Soils, Paris, 1, pp. 83-88.
- Gibson R.E. 1974. The analytical method in soil mechanics. *Géotechnique* 24(2): 115-140.
- Gili Y.Y. 1988. Modelo microestructural para medios granulares no saturados. *Doctoral Thesis, Universitat Politècnica de Catalunya*, Barcelona, Spain.
- Graham J., Noonan M.L. & K.V. Lew 1983. Yield state and stress-strain relationship in natural plastic clay, *Canadian Geotechnical Journal*, 20(3), pp. 502-516.
- Hardin B.O. 1978. The nature of stress-strain behaviour for soils. State of the art report. Proc. Spec. Conf. on Earthquake Engineering and Soil Dynamics. Pasadena, California, ASCE, 3-90.
- Hardin B.O. e Black W.L. 1968. Vibration modulus of normally consolidated clay. *J.*

Geotech. Engrg. ASCE. 94(2), pp. 353-369.

Hardin B.O. e Black W.L. 1969. Closure to 'Vibration modulus of normally consolidated clay'. *Journ. Soil Mech. Found. Div., ASCE*, 95, SM6, pp. 1531-1537.

Head K.H. 1992. *Manual of soil laboratory testing*. Pentech Press, London.

Hilf J.W. 1956. An investigation of pore-water pressure in compacted cohesive soils. *Ph.D. thesis, Technical Memo*, 654, U.S. Department of Interior. Bureau of Reclamation, Design and Construction Division, Denver.

Hird C.C. e Young C.Y. 1989. The use of proximity transducers for local strain measurement in triaxial tests. *ASTM Geotechnical Testing Journ.*, 12(4), pp. 292-296.

Ho D.Y.F. e Fredlund D.G. 1982. Strain rates for unsaturated soils shear strength testing. *Proc. 7th Southeast Asian Geotech. Conf.*, Hong Kong.

Ho D.Y.F., Fredlund D.G. e Rahardjo H. 1992. Volume change indices during loading and unloading of an unsaturated soil. *Canadian Geotechnical Journal*, 29, 195-207.

Hoque, E. e Tatsuoka F. 1998. Anisotropy in the elastic deformation of materials. *Soils and Foundations* 38(1): 163-179.

Houlsby G.T. 1997. The work input to an unsaturated granular material. *Géotechnique*, 47(1), 193-196.

Houlsby G.T. e Wroth C.P. 1991. The variation of shear modulus of a clay with pressure and overconsolidation ratio. *Soils and Foundations*, 31(3).

Huang S., Fredlund D.G. e Barbour S.L. 1998. Measurement of the coefficient of permeability for a deformable unsaturated soil using a triaxial permeameter. *Canadian Geotechnical Journal*, 35, pp. 426-432.

Hueckel T. 1992. Water-mineral interactions in hygro-mechanics of clays exposed to environmental loads: a mixture-theory approach. *Canadian Geotechnical Journal*, 29, pp. 1071-1086.

Isenhower W.M. 1979. Torsional Simple Shear/Resonant Column properties of San Francisco Bay Mud. *M.S. Thesis, The University of Texas at Austin*.

Isenhower W.M. e Stokoe K.H. 1981. The strain-rate dependent shear modulus of San Francisco bay mud. *Proc. Int. Conf. Recent Adv. in Geotech. Earthquake Eng. and Soil Dynamics*. Univ. of Missouri Rolla, St. Louis.

Ishibashi I. e Zhang X. 1993. Unified dynamic shear moduli and damping ratios of sands and clays. *Soils and Foundations*, 33(1), pp. 182-191.

Jaki J. 1948 Pressure in soils – *Proc. 2nd Int. Conf. Soil Mech. Found. Eng.*, 1, pp. 103-107.

- Jamiolkowsky M., Lancellotta R. e Lo Presti D.C.F. 1994. Remarks on the stiffness at small strains of six Italian clays. Proc. of 1st Int. Symp. on Pre-failure Deformation of Geomaterials, Sapporo, 2, pp. 817-836.
- Jamiolkowsky M., Lancellotta R., Lo Presti D.C.F. e Pallara O. 1995. Stiffness of Toyura sand at small and intermediate strain. Proc. XIII Int. Conf. on Soil Mechanics and Foundation Engineering, New Delhi, 1, pp. 169-172.
- Jardine R.J. 1992. Some observations on the kinematic nature of soil stiffness. Soils and Foundations 32, 2, pp. 111-124.
- Jennings J.E. e Burland J.B. 1962. Limitations to the effective stresses in partly saturated soils. Géotechnique, 12, pp. 125-144.
- Jiménez-Salas J.A. 1995. Foundation and pavements on unsaturated soils – Part two: expansive clays. Proc. I Int. Conf. Usat. Soils, Paris, 3, pp. 1441-1465.
- Jommi C. e di Prisco C. un semplice approccio teorico per la modellazione del comportamento meccanico dei terreni granulari parzialmente saturi. Il ruolo dei fluidi nei problemi di Ingegneria Geotecnica, Mondovì, 167-188.
- Josa A. 1988. Un modelo elastoplástico para suelos no saturados. Tesis Doctoral. Universitat Politecnica de Catalunya, Barcelona, Spain.
- Josa A., Alonso E.E., Lloret A. e Gens A. 1987. Stress-strain behaviour of partially saturated soils. IX Eur. Conf. Soil Mech. Found. Eng., Dublin, 2, pp. 561-564.
- Josa A., Balmaceda A., Gens A., Alonso E. 1992. An elasto-plastic model for partially saturated soils exhibiting a maximum of collapse. Proc. III Int. Conf. Computational Plasticity, Barcelona, 1, 815-826.
- Kassif G. e Ben Shalom A. 1971. Experimental relationship between swell pressure and suction. Géotechnique, 21(3), pp. 245-255.
- Klute A. 1965. Laboratory measurement of hydraulic conductivity of unsaturated soil. Methods of Soil Analysis, Monograph 9, American Society of Agronomy, Madison, WI (USA), pp. 253-261.
- Kohgo Y., Nakano M., Miyazaky T. 1993. Theoretical aspects of constitutive modelling for unsaturated soils. Soils and Foundations, 33(4), 49-63.
- Kokusho T., Yoshida Y. e Esashy Y. 1982. Dynamic properties of soft clays for wide strain ranges. Soils and Foundations, 20(2), pp. 45-60.
- Komornik A., Licneh M. e Smucha S. 1980. Shear strength and swelling of clays under suction. 4th Int. Conf. Expansive Clays, Denver, 1, pp. 206-226.

- Lagny C. 1996. Comportemente mécanique des sols fins sous fortes contraintes et fortes pressions négatives. Thèse de Doctorat, Ecole Centrale, Paris, France.
- Lambe T. W. 1958a. The structure of compacted clay. *Journal of Soil Mechanics and Foundations Division ASCE*, 84(SM2).
- Lambe T. W. 1958b. The engineering behaviour of compacted clay. *Journal of Soil Mechanics and Foundations Division ASCE*, 84(SM2).
- Lambe T. W. e Whitman R.V. 1969. Soil Mechanics. Wiley & Sons, New York.
- Leong E.C. e Rahardjo H. 1997. Permeability functions for unsaturated soils. *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 123, pp. 1118-1126.
- Lloret, A. e Alonso E.E. 1985. State surfaces for partially saturated soils. *Proc. 11yh Int. Conf. Soil Mech. Foud. Eng.*, San Francisco, 2, pp. 557-562.
- Lo Presti D.C.F., Jamiolkowsky M., Pallara O. e Cavallaro A. 1996. Rate and creep effect on the stiffness of soils. Measuring and modeling time dependent soil behaviour, *ASCE Geot. Spec. Publ.*, 61, pp. 166-180.
- Maatouk A. 1993. Application des concepts d'état limite et d'état critique à un sol partiellement saturé effondrable. These de Doctorat, Ecole des gradués de l'Université Laval.
- Macari E.J., Parker J.K. e Costes N.C. 1997. Measurement of volume change in triaxial test using digital imaging techniques. *Geotechnical Testing Journal*, 20(1), pp. 103-109.
- Magispo 2001. Studio delle condizioni di stabilità degli argini fluviali e per la definizione di una metodologia progettuale. Rapporto preliminare. Dipartimento di Ingegneria Geotecnica, Napoli.
- Mancuso, C., Vassallo R. e Vinale F. 2000a. Effects of moulding water content on the behaviour of an unsaturated silty sand. *Asian Conference on Unsaturated Soils*, Singapore 1: 545-550.
- Mancuso C., Nicotera M.V., Rampino C. e Vassallo R. 2000b. La sperimentazione sui terreni non saturi: tecniche e procedure di laboratorio. Relazione di Panel al *XX Convegno Nazionale di Geotecnica*, Parma, 22-25 settembre 1999. *Rivista Italiana di Geotecnica*. Supplemento al n.3, pp. 70-98.
- Mancuso C., Vassallo R. e d'Onofrio A. 2002. Small strain behavior of a silty sand in controlled-suction resonant column – torsional shear tests. *Canadian Geotechnical Journal*, vol. 39, 22-31.
- Marcuson W.F. III e Wahls H.E., 1978. Effect of Time on Damping Ratio of Clays Dynamic

- geotechnical testing, *ASTM STP* 654, 126-147.
- Marinho E.A.M., Chandler R.J. e Crilly M.S. 1995. Stiffness measurements on an high plasticity clay using bender elements. *Proc. I Int. Conf. on Unsaturated Soils, UNSAT '95*, Paris, France, vol. 1, pp. 535-539.
- Maswoswe J. 1985. Stress path for a compacted soil during collapse due to wetting. Ph. D. Thesis, Imperial College, London
- Matyas E.L. 1967. Air and water permeability of compacted soils, in *Permeability and Capillarity of Soils*. ASTM STP 417, ASTM, pp. 160-175.
- Matyas E.L. e Radhakrishna H.S. 1968. Volume change characteristics of partially saturated soils. *Géotechnique* 18(4), pp. 432-448
- Mendoza M.J. e Alberro J. 1992. Engineering properties and microstructure of compacted cohesive soils. *Volumen Raul J. Marsal*, Soc. Mexicana de Mecanica de Suelos, Mexico.
- Miller D.J. e Nelson J.D. 1993. Osmotic suction as a valid stress state variable in unsaturated soil mechanics. *Unsaturated soils*, ASCE Special Publication 39, pp. 64-76.
- Mitchell J.K. 1976. Fundamentals of soil behavior. *John Wiley and Sons, New York*.
- Modaressi A. e Abou-Beker N. 1994. Constitutive model for unsaturated soils: validation on a silty material. 3rd Eur. Conf. Numerical Methods in Geotech. Eng., Manchester, pp. 91-96.
- Morgenstern N.R. 1979. Properties of compacted soils. Contribution to Panel discussion, Session IV, Proc. 6th Panamerican Conf. Soil Mech. Found. Eng., Lima, Perù, 3, pp. 349-353.
- Mualem Y. 1974. A conceptual model for hysteresis. *Water Resourecs Research*, 10(3), pp. 514-520.
- Nicotera M.V. 1988. Effetti del grado di saturazione sul comportamento meccanico di un'argilla del napoletano. Tesi di dottorato, Università degli Studi di Napoli Federico II.
- Olivares L. 1996. Caratterizzazione dell'argilla di bisaccia in condizioni monotone, cicliche e dinamiche e riflessi sul comportamento del "Colle" a seguito del terremoto del 1980. Tesi di dottorato, Università degli Studi di Napoli "Federico II".
- Olson R.E. e Langfelder L.J. 1965. Pore water pressure in unsaturated soils. *Journ. Soil Mech. Found. Div. ASCE*, 91(SM4), pp. 127-150.
- Papa V. e Silvestri F. 1987. Procedura di calibrazione dell'apparecchiatura per prove di colonna risonante e torsione ciclica. Rapporto interno. Università degli Studi di Napoli, Istituto di Tecnica delle Fondazioni e Costruzioni in Terra.
- Papa V., Silvestri F. e Vinale F. 1989. A computer-aided soil dynamics laboratory. 4th Int.

Conf. Computational Methods and Experimental Measurement, Capri, Italia.

Parlato A. 2002. Comportamento meccanico di due materiali impiegati nella costruzione di rilevati. Tesi di laurea, Università degli Studi di Napoli Federico II.

Picornell M. e Nazarian S. 1998. Effects of soil suction on the low-strain shear modulus of soils. *Proc. II Int. Conf. on Unsaturated Soils*, UNSAT '98, Beijing, China, vol. 2, pp. 102-107.

Pradhan Tej B.S, Tatsuoka F. e Molenkamp F. 1986. Accuracy of automated volume change measurement by means of a differential pressure transducer, technical note. *Soils and Foundations*, 26(4), pp. 150-158.

Prapaharan S., White D.M. e Altashelf A.G. 1991. Fabric of field- and laboratory-compacted clay. *Journal of Geotechnical Engineering ASCE*. 117(12), pp.1934-1940.

Price M. 1985. Introduction to groundwater. Chapman & Hall, London.

Proctor R.R. 1933. Fundamental principles of soil compaction. *Engineering News Records* 111, 245-248, 286-289, 348-351.

Qing Y. e Jankui J. 1998. The determination of volume expansive properties in swelling clay. *II Int. Conf. on Unsaturated Soils*, Beijing, 1, pp. 450-454.

Quian X., Gray D.H. e Woods R.D. 1991. Resonant column tests on partially saturated sands. *Geotech, Testing Journ., ASCE*, 14(3), pp. 266-275.

Rampello S., Silvestri F. e Viggiani G. 1995. The dependence of G_0 on stress state and history. *Proc. of the 1st Int. Symp. On Pre-failure Deformation of Geomaterials*, Sapporo, 2, pp. 1155-1160.

Rampino C. 1997. Comportamento meccanico di una sabbia limosa ed argillosa costipata parzialmente satura. Tesi di dottorato, Univ. di Napoli Federico II

Rampino C., Mancuso C. e Vinale F. 1999a. Laboratory testing on a partially saturated soil: equipment, procedures and first experimental results. *Canadian Geotechnical Journal*, 36(1), pp. 1-12.

Rampino C., Mancuso C. e Vinale F. 1999b. Mechanical behaviour of an unsaturated dynamically compacted silty sand. *Italian Geotech. Journ.*, 33(2), pp. 26-39.

Ridley A.M. e Burland J.B. 1993. A new instrument for measurement of soil moisture suction. *Géotechnique*, 43(2), pp. 321-324.

Richards B.J. 1965. Measurement of the free energy of soil moisture by the psychrometric technique using thermistors. Moisture equilibria and moisture changes in soils beneath covered areas, a symposium in print. Australia, Butterworths, pp. 39-46.

- Richards L.A. 1941. A presson membrane extraction pparatus for soil suction. Soil Science, 51, pp.377-386.
- Richards L.A. 1948. Porous plate apparatus for measuring moisture retention and trasmission by soil. Soil Science, 66, pp. 105-110.
- Romero E. 1999. Charachterization and thermo-hydro-mechanical behaviour of unsaturated Boom clay: an experimental study. Doctoral thesis. Universitat Politècnica de Catalunya, Barcelona, Spain.
- Romero E. 2002. Comunicazione personale.
- Sangiuliano C. 1999. Analisi sperimentale del comportamento meccanico di un terreno costipato parzialmente saturo. Tesi di laurea, Università degli Studi di Napoli "Federico II".
- Santucci de Magistris F. 1996. Comportamento di una sabbia argillosa costipata e addizionata con bentonite. Tesi di dottorato, Università degli Studi di Napoli "Federico II".
- Seed H.B. e Chan C.K. 1959. Structure and strenght characteristics of compacted clays. Journal of Soil Mechanics and Foundations Division ASCE, 85(SM5), pp. 87-127.
- Sharma R. S. 1998. Mechanical behaviour of unsaturated highly expansive clays. Ph. D. thesis, University of Oxford, U.K.
- Sharma R. S. e Wheeler S.J 2000. Behaviour of an unsaturated highly expansive clay during cycles of wetting and drying. Proc. I Asian Conf. Unsaturated Soils, Singapore, 1, 721-726.
- Silvestri F. 1991. Analisi del comportamento dei terreni naturali in prove cicliche e dinamiche. Tesi di dottorato, Univ. di Napoli Federico II
- Sivakumar V. 1993. A critical state framework for unsaturated soils. Ph.D. Thesis, University of Sheffield, U.K.
- Sivakumar V. e Ng P. 1998. Yielding of unsaturated soils. II Int. Conference Unsaturated Soils, Beijing, China, 1, pp.131-136.
- Slatter E.E., Jungnickel D., Smith D.W. e Allmann M.A. 2000. Investigation of suction generation in apparatus employing osmotic methods. Asian Conference on Unsaturated Soils, Singapore, 1, pp. 297-302.
- Soga K., Nakagawa K. e Mitchell J.K. 1995. Measurement of stiffness degradation characteristics of clay using torsional shear device. 1st Earthquake Geotech. Eng. Conf. Tokyo, 1, 107-112.
- Sparks A.D.W. 1963. Theoretical considerations of stress equations for partly saturated soils. Proc. 3rd African Conf. Soil Mech. Found. Eng., Salisbury, Rohdesia, 1, pp. 215-218.
- Stepkowska E.T. 1990. Aspects of clay/electrolyte/water system with special reference to the

- geotechnical properties of clays. *Engineering Geology*, 28, pp. 249-267.
- Suriol J., Gens A. e Alonso E.E. 1998. Behaviour of compacted soils in suction controlled oedometer. II Int. Conf. on Unsaturated Soils, Beijing, 1, pp. 438-444.
- Suriol J., Gens A. e Alonso E.E. 2002. Volumetric behaviour of a compacted soil upon wetting. 3rd Int. Conf. on Unsaturated Soils, Recife, Brazil, 2, pp. 619-623.
- Tarantino A. e Mongiovi L. 2000. A study of the efficiency of semi-permeable membranes in controlling soil matrix suction using the osmotic technique. *Asian Conference on Unsaturated Soils*, Singapore, 1, pp. 302-308.
- Tarantino A., Mongiovi L. e Bosco G. 2000. An experimental investigation on the independent isotropic stress variables for unsaturated soils. *Géotechnique* 50(3), pp. 275-282.
- Tatsuoka F. 1988. Some recent developments in triaxial testing system for cohesionless soils. *ASTM STP 977* (Donaghe, Chaney & Silver eds.), pp. 7-67.
- Tatsuoka F., Lo Presti D.C.F. e Kohata Y. 1995. Deformation characteristics of soils and soft rocks under monotonic and cyclic loads and their relationships. *Proc. Int. Conf. on Recent Advances in Geotechnics, Earthquake Engng and Soil Dynamics*, St. Louis, 2, pp. 851-879.
- Tatsuoka F., Jardine R.J., Lo Presti D.F.C., Di Benedetto H., Kodaka T. 1997. Characterising the pre-failure deformation properties of geomaterials. Theme lecture, *Proc. XIV Int. Conf. on Soil Mechanics and Foundation Engineering*, Hamburg.
- Tavenas F., des Roisiers J.P., Leroueil S., LaRoche P. e Roy M. 1979. The use of strain energy as a yield and creep criterion for lightly overconsolidated clays. *Géotechnique*, 29(3), pp. 285-303.
- Terzaghi K. 1936. The shearing resistance of saturated soils and the angle between the planes of shear. *Proc. 1st Int. Conf. Soil Mech Found. Eng.*, 1, pp. 54-56.
- Thomas S.D. 1987. The consolidation behaviour of gassy soils. Ph.D. Thesis, University of Oxford, U.K.
- Van Genuchten M.T. 1980. A closed-form equation for predicting the hydraulic conductivity of unsaturated soils. *Soil Science Soc. Am. Journal*, 44, pp. 892-898.
- Vanapalli S.K. 1994. Simple test procedures and their interpretation in evaluating the shear strength of unsaturated soils. Ph.D. thesis, Department of Civil Engineering, University of Saskatchewan, Saskatoon.
- Vanapalli S.K., Fredlund D.G. e Pufahl D.E. 1996. The relationship between the soil-water characteristic curve and the unsaturated shear strength of a compacted glacial till. *Geotechnical Testing Journal*, 19, 3, pp. 259-268.

- Vaunat J., Romero E. e Jommi C. 2000. An elastoplastic hydro-mechanical model for unsaturated soils. International Workshop on Experimental Evidence and Theoretical Approaches in Unsaturated Soils, Trento, 10-12 aprile 2000, 121-138.
- Vassallo R. e Mancuso C. 2000. Soil behaviour in the small and the large strain range under controlled suction conditions. International Workshop on Experimental Evidence and Theoretical Approaches in Unsaturated Soils, Trento, 10-12 aprile 2000, 75-90.
- Vicol T. 1990. Comportement hydraulique et mecanique d'un limon non saturé. Aplication a la modélisation. Thèse de Doctorat, Ecole Nationale de Ponts et Chaussees, Paris.
- Viggiani G. e Atkinson J.H. 1995. Stiffness of fine-grained soil at very small strains. *Géotechnique*, 45, 2, 249-265.
- Vanapalli S.K, Fredlund D.G. e Pufahl D.E. 1996. The relationship between the soil-water characteristic curve and the unsaturated shear strength of a compacted glacial till. *Geotechnical Testing Journal*, 19, 3, pp. 259-268.
- Vinale F., Mancuso, C. e Silvestri F., 1995. *Dinamica dei terreni*. Ed. Cremonese.
- Vinale F., d'Onofrio A., Mancuso C., Santucci De Magistris F. e Tatsuoka F. 1999. The prefailure behaviour of soils as construction materials. II International Conference on pre-failure behaviour of geomaterials, Torino, 2, pp. 955-1007.
- Vucetic M. e Dobry R. 1991. Effect of soil plasticity on cyclic response. *Journal of Geotech. Eng. ASCE*, 117(1), 89-107.
- Wan A.W.L., Gray M.N. e Graham J., 1995. On the relations of suction, moisture content and soil structure in compacted clays. *Proc. I Int. Conf. Unsaturated Soils*, Paris, 1, pp. 215-222.
- Wheeler S.J. 1986. The stress-strain behaviour of soils containing large bubbles. Ph. D. Thesis, University of Oxford, U.K.
- Wheeler S.J. 1996. Inclusion of specific water volume within an elasto-plastic model for unsaturated soils, *Canadian Geotech. Journ.*, 33(1), pp. 42-57.
- Wheeler S.J. 1988. The undrained shear strength of soils containing large bubbles. *Géotechnique*, 38(1), 399-413.
- Wheeler S.J. e Karube D. 1995. State of the art report: Constitutive modelling. *Proc. I Int. Conf. Unsaturated Soils*, Paris, 3, pp. 1323-1356.
- Wheeler S.J. e Sivakumar V. 1995. An elasto-plastic critical state framework for unsaturated soil. *Géotechnique*, 45 (1), pp. 35-53.
- Wheeler S.J. e Sivakumar V. 2000. Influence of compaction procedure on the mechanical behaviour of an unsaturated compacted clay. Part 1: wetting and isotropic compression.

Géotechnique 50, n.4, 359-368

Wheeler S.J. e Sivakumar V. 2000. Influence of compaction procedure on the mechanical behaviour of an unsaturated compacted clay. Part 2: shearing and constitutive modelling.

Géotechnique 50, n.4, 369-376

Wilson S.D. 1950. Small soil compaction apparatus duplicates field results closely. *Engineering News-Record*, 145(18), pp. 34-36.

Woodburn J.A., Holden J.C. e Peter P. 1993. The transistor psychrometer. A new instrument for measuring soil suction. *Geotechnical Special Publication ASCE*, 39, pp. 91-102.

Wroth C.P. e Houlsby G.T. 1985. Soil Mechanics: Property characterisation and analysis procedures. *Proc. XI Int. Conf. on Soil Mech. and Found. Eng.*, San Francisco, 1, pp. 1-57.

Wu S., Gray D.H. e Richart F.E. 1984. Capillary effects on dynamic modulus of sands and silts. *Journ. Geotech. Eng. Div., ASCE*, 110(9), pp. 1188-1203.

Wu S., Gray D.H. e Richart F.E. 1985. Capillary effects on shear modulus at high strains. *Proceeding 11th Int. Conf. Soil Mech. Found Eng.*, San Francisco, 2, pp. 1091-1094.

Yahia-Aissa M. 1999. Comportement hydromécanique d'une argile gonflante fortement compactée. Thèse de Doctorat, Ecole Nationale de Ponts et Chaussées, Paris, France.

Yahia-Aissa M., Cui Y. J. e Delage P. 2000. Void ratio-suction relationship of a compacted swelling clay FOCA. *International Workshop on Unsaturated Soils*, Trento, 1, pp. 65-74.

Yamashita S. e Toki S. 1994. Cyclic deformation characteristics of sands in triaxial and torsional tests. *Proc. of Int. Symp. on Pre-Failure Deformation of Geomaterials, IS-Hokkaido* (Shibuya et al., eds.) 1: 31-36. Rotterdam: Balkema

Yong R.N., Japp R.D. e How G. 1971 Shear strength of partially saturated clays. *Proc. 4th Asian Reg. Conf. Soil Mech. Found. Eng.* Bangkok, 2(12), pp. 183-187.

Yudhbir 1982. Collapsing behaviour of residual soils. *Proc. 7th Southeast Asian Geot. Conf.*, Hong Kong, 1, pp. 915-930.