

Referências Bibliográficas

- [1] ALLEN, M.; TILDESLEY, D. **Computer simulation of liquids.** Oxford University Press, 1990.
- [2] BATHURST, R.; ROTHENBURG, L. **Micromechanical aspects of isotropic granular assemblies with linear contact interactions.** Journal of Applied Mechanics, 55(1):17–23, 1988.
- [3] BATHURST, R.; ROTHENBURG, L. **Note on a random isotropic granular material with negative Poissons ratio.** International Journal of Engineering Science, 26(4):373–383, 1988.
- [4] BATHURST, R.; ROTHENBURG, L. **Observations on stress–force–fabric relationships in idealized granular materials.** Mechanics of Materials, 9(1):65–80, 1990.
- [5] BATHURST, R.; ROTHENBURG, L. **Investigation of micromechanical features of idealized granular assemblies using DEM.** Engineering Computations, 9:199–210, 1992.
- [6] BATHURST, R.; ROTHENBURG, L. **Investigation of plane elliptical particle assemblies under stress rotations.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS. Balkema, Rotterdam, 1994.
- [7] BENABBOU, A.; BOROUCAKI, H.; LAUG, P. ; LU, J. **Geometrical modeling of granular structures in two and three dimensions. Application to nanostructures.** International Journal for Numerical Methods in Engineering, 80:425–454, 2009.
- [8] Biarez, J.; Gourve's, R., editors. **Proceedings of International Congress on Micromechanics of Granular Media**, 1989.
- [9] BOOKSTEIN, F. **Principal warps: Thin-plate splines and the decomposition of deformations.** IEEE Transactions on Pattern Analysis and Machine Intelligence, 11:567–585, 1989.

- [10] BOTSCH, M.; PAULY, M.; WICKE, M. ; GROSS, M. **Adaptive space deformations based on rigid cells**. In: EUROGRAPHICS, 2007.
- [11] BRIDGES, F.; HATZES, A. ; LIN, D. **Structure, stability and evolution of Saturn's rings**. Nature, 309:333–335, 1984.
- [12] BRILLIANTOV, N.; SPAHN, F.; HERTZSCH, J. ; PSCHEL, T. **A model for collisions in granular gases**. Physical Review E, 53:5382–5392, 1996.
- [13] BROWN, B.; RUSINKIEWICZ, S. **Non-rigid range-scan alignment using thin-plate splines**. In: 3D DATA PROCESSING VISUALIZATION AND TRANSMISSION, 2004.
- [14] CAMPBELL, C.; BRENNEN, C. **Computer simulation of shear flows of granular material**. In: MECHANICS OF GRANULAR MATERIALS: NEW MODELS AND CONSTITUTIVE RELATIONS. Elsevier Amsterdam, 1983.
- [15] CHO, N.; MARTIN, C. ; SEGO, D. **A clumped particle model for rock**. International Journal of Rock Mechanics and Mining Sciences, 44:997–1010, 2007.
- [16] CLEARY, P. **Large scale industrial DEM modelling**. Engineering Computations, 21:169–204, 2004.
- [17] CUNDALL, P. **BALL—A computer program to model granular media using the distinct element method**. Technical Note, 13:129–163, 1978.
- [18] CUNDALL, P.; HART, R. **Numerical modelling of discontinua**. Engineering Computations, 9:101–113, 1992.
- [19] CUNDALL, P.; STRACK, O. **A distinct element model for granular assemblies**. Geotechnique, 29:47–65, 1979.
- [20] CUNDALL, P.; STRACK, O. **The development of constitutive laws for soil using the distinct element method**. In: NUMERICAL METHODS IN GEOMECHANICS, 1979.
- [21] CUNDALL, P.; STRACK, O. **The distinct element method as a tool for research in Granular media, Part II**. Technical report, Department of Civil Engineering, University of Minnesota, 1979.

- [22] CUNDALL, P.; STRACK, O. **Modeling of microscopic mechanisms in granular material**. In: MECHANICS OF GRANULAR MATERIALS: NEW MODELS AND CONSTITUTIVE RELATIONS, 1982.
- [23] CUNDALL, P.; STRACK, O. **Modeling of microscopic mechanisms in granular material**. In: MECHANICS OF GRANULAR MATERIALS: NEW MODELS AND CONSTITUTIVE RELATIONS. Elsevier, Amsterdam, 1983.
- [24] DONZE, F.; MAGNIER, S.; DAUDEVILLE, L.; MARIOTTI, C. ; DAVENNE, L. **Numerical study of compressive behavior of concrete at high strain rates**. Journal of Engineering Mechanics, 125:1154, 1999.
- [25] DUCHON, J. **Splines minimizing rotation-invariant semi-norms in Sobolev spaces**. In: CONSTRUCTIVE THEORY OF FUNCTIONS OF SEVERAL VARIABLES. Springer-Verlag, 1977.
- [26] FERREZ, J. **Dynamic triangulation for efficient 3D simulation of granular material**. Tese de Doutorado, Ecole Polytechnique Federal de Lausanne, 2001.
- [27] FOX, P.; EDIL, T. ; MALKUS, D. **Discrete element model for compression of peat**. In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1994.
- [28] GAMMA, E.; HELM, R.; JOHNSON, R. ; VLISSIDES, J. **Design patterns**. Addison-Wesley, 1995.
- [29] GEAR, C. **The numerical integration of ordinary differential equations of various orders**. Technical report, Argonne National Laboratory, 1966.
- [30] GEAR, C. **Numerical initial value problems in ordinary differential equations**. Prentice Hall, 1971.
- [31] GHABOUSSI, J.; BARBOSA, R. **Three-dimensional discrete element method for granular materials**. International Journal for Numerical and Analytical Methods in Geomechanics, 14:451–472, 1990.
- [32] HAFF, P.; WERNER, B. **Computer simulation of the mechanical sorting of grains**. Powder Technology, 48:239–245, 1986.
- [33] HAWKINS, G. **Simulation of granular flow**. In: MECHANICS OF GRANULAR MATERIALS: NEW MODELS AND CONSTITUTIVE RELATIONS. Elsevier Amsterdam, 1983.

- [34] HERTZ, H. **Ueber die berührung fester elastischer korper.** Journal fur die reine und angewandte Mathematik, p. 156–171, 1882.
- [35] ISSA, J.; NELSON, R. **Numerical analysis of micromechanical behaviour of granular materials.** Engineering Computations, 9:211–223, 1992.
- [36] ITASCA CONSULTING GROUP, I. **PFC2D (particle flow code in 2 dimensions), Version 1.1,** 1995.
- [37] JENKINS, J.; SATAKE, M. **Mechanics of granular materials: New models and constitutive relations.** Elsevier Science, 1983.
- [38] KAWAI, T.; TAKEUCHI, N. **Simulation of granular flow.** In: MECHANICS OF GRANULAR MATERIALS: NEW MODELS AND CONSTITUTIVE RELATIONS. Elsevier Amsterdam, 1983.
- [39] KAZERANI, T.; ZHAO, J. **Micromechanical parameters in bonded particle method for modelling of brittle material failure.** International Journal for Numerical and Analytical Methods in Geomechanics, 12:12–13, 2010.
- [40] KURAOKA, S.; BOSSCHER, P. **Parallelization of the distinct element method.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1997.
- [41] LIN, X.; NG, T. **Numerical modeling of granular soil using random arrays of three dimensional elastic ellipsoids.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1994.
- [42] LIN, X.; NG, T. **A three–dimensional discrete element model using arrays of ellipsoids.** Geotechnique, 47:319–329, 1997.
- [43] MEEGODA, J. **Micro–mechanics and microscopic modeling in geotechnical engineering: Current status and future.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1998.
- [44] MIRGHASEMI, A.; ROTHENBURG, L. ; MATYAS, E. **Effect of confining pressure on angle of internal friction of simulated granular materials.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1994.
- [45] MIYATA, M.; NAKAGAWA, M. ; MUSTOE, G. **Design considerations of rubble rock foundations based on a discrete superquadric**

- particle simulation method.** In: ENGINEERING COMPUTATIONAL TECHNOLOGY, 2001.
- [46] MUSTOE, G.; DEPOORTER, G. **A numerical model for the mechanical behavior of particulate media containing non-circular shaped particles.** Powders and Grains, 93:421–427, 1993.
- [47] Mustoe, G.; Henriksen, M. ; Huttelmaier, H., editors. **Proceedings of International Conference on Discrete Element Methods**, 1989.
- [48] MUSTOE, G.; MIYATA, M. **Material flow analyses of noncircular-shaped granular media using discrete element methods.** Journal of Engineering Mechanics, 127:1017–1026, 2001.
- [49] NG, T. **Numerical simulation of granular soil under monotonic and cyclic loading: A particulate mechanics approach.** Tese de Doutorado, Department of Civil Engineering, Rensselaer Polytechnic Institute, Troy, New York, 1989.
- [50] NG, T. **Numerical simulations of granular soil using elliptical particles.** Computers and Geotechnics, 16:153–169, 1994.
- [51] NG, T.; LIN, X. **Numerical simulations of naturally deposited granular soil with ellipsoidal elements.** In: CONFERENCE ON DISCRETE ELEMENT METHODS, 1993.
- [52] ODA, K.; SHIGEMATSU, T. ; ONISHI, N. **A new numerical method for analyzing liquid–solid flows – its application to analyzing behavior of solid particles dumped into water.** In: CONFERENCE ON DISCRETE ELEMENT METHODS, 1993.
- [53] ONER, M. **Analysis of fabric changes during cyclic loading of granular soils.** In: CONFERENCE ON EARTHQUAKE ENGINEERING, 1984.
- [54] PETERS, B.; DŽIUGYS, A. **Numerical simulation of the motion of granular material using object-oriented techniques.** Computer Methods in Applied Mechanics and Engineering, 191:1983–2007, 2002.
- [55] POSCHEL, T.; SCHWAGER, T. **Computational granular dynamics models and algorithms.** Springer-Verlag, 2005.
- [56] POTYONDY, D.; CUNDALL, P. **A bonded–particle model for rock.** International Journal of Rock Mechanics and Mining Sciences, 41:1329–1364, 2004.

- [57] PREECE, D.; JENSEN, R. ; CHUNG, S. **Development and application of a 3-D rock blast computer modeling capability using discrete elements.** In: CONFERENCE ON EXPLOSIVES AND BLASTING TECHNIQUE, 2001.
- [58] ROTHENBURG, L. **Micromechanics of idealised granular materials.** Tese de Doutorado, Department of Civil Engineering, Carleton University, Ottawa, Ontario, Canada, 1980.
- [59] ROTHENBURG, L.; BATHURST, R. **Analytical study of induced anisotropy in idealized granular materials.** Geotechnique, 39:601–614, 1989.
- [60] ROTHENBURG, L.; BATHURST, R. **Numerical simulation of idealize granular assemblies with plane elliptical particles.** Computers and Geotechnics, 11:315–329, 1991.
- [61] ROTHENBURG, L.; BATHURST, R. **Micromechanical features of granular assemblies with planar elliptical particles.** Geotechnique, 42:79–95, 1992.
- [62] SALTZER, S. **Numerical modeling of crustal scale faulting using the distinct element method.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1993.
- [63] SATAKE, M.; JENKINS, J. **Micromechanics of granular materials.** Elsevier, 1988.
- [64] SAWADA, S.; PRADHAM, T. **Analysis of anisotropy and particle shape by distinct element method.** In: COMPUTER METHODS AND ADVANCES IN GEOMECHANICS, 1994.
- [65] SHAFER, J.; DIPPEL, S. ; WOLF, D. **Force schemes in simulations of granular materials.** Journal de Physique I, 6:5–20, 1996.
- [66] Shimizu, Y.; Hart, R. ; Cundall, P., editors. **Proceedings of 2nd International PFC Symposium,** 2004.
- [67] Siriwardane, H.; Zaman, M., editors. **Proceedings of 8th International Conference on Computer Methods and Advances in Geomechanics,** 1994.
- [68] STRACK, O.; CUNDALL, P. **The distinct element method as a tool for research in granular media, Part I.** Technical report, Department of Civil Engineering, University of Minnesota, 1978.

- [69] TAYLOR, L.; PREECE, D. **DMC—A rigid body motion code for determining the interaction of multiple spherical particles.** Technical report, Sandia National Laboratory, 1989.
- [70] TAYLOR, L.; PREECE, D. **Simulation of blasting induced rock motion using spherical element models.** Engineering Computations, 9:243–252, 1992.
- [71] THORNTON, C.; BARNES, D. **Computer simulated deformation of compact granular assemblies.** Acta Mechanica, 64(1–2):45–61, 1986.
- [72] THORNTON, C.; LIAN, G. ; ADAMS, M. **Modelling of liquid bridges between particles in DEM simulations of particle systems.** In: CONFERENCE ON DISCRETE ELEMENT METHODS, 1993.
- [73] TING, J.; CORKUM, B. **Strength behaviour of granular materials using discrete numerical modeling.** In: NUMERICAL METHODS IN GEOMECHANICS, 1988.
- [74] TING, J. M.; MAECHUM, L. ; ROWELL, J. **Effect of particle shape on the strength and deformation mechanisms of ellipse-shaped granular assemblages.** Engineering Computations, 12:99–108, 1995.
- [75] TRENT, B.; MARGOLIN, L. **A numerical laboratory for granular solids.** Engineering Computations, 9:191–197, 1992.
- [76] WAHBA, G. **Spline models for observational data.** Society for Industrial Mathematics, 1990.
- [77] WALTON, O. **Explicit particle dynamics model for granular materials.** In: NUMERICAL METHODS IN GEOMECHANICS, 1982.
- [78] WALTON, O. **Particle-dynamics calculations of shear flow.** In: MECHANICS OF GRANULAR MATERIALS: NEW MODELS AND CONSTITUTIVE RELATIONS. Elsevier Amsterdam, 1983.
- [79] WALTON, O.; BRAUN, R. **Viscosity, granular-temperature, and stress calculations for shearing assemblies of inelastic, frictional disks.** Journal of Rheology, 30:949–980, 1986.
- [80] Williams, J.; Mustoe, G., editors. **Proceedings of 2nd International Conference on Discrete Element Methods, 1993.**

- [81] WILLIAMS, J.; OCONNOR, R. **A linear complexity intersection algorithm for discrete element simulation of arbitrary geometries.** Engineering Computations, 2:185–201, 1995.
- [82] WILLIAMS, J.; PENTLAND, A. **Superquadrics and modal dynamics for discrete elements in interactive design.** Engineering Computations, 9:115–127, 1992.
- [83] WILLIAMS, J.; REGE, N.; O’CONNOR, R. ; AMARATUNGA, K. **Dynamic wave propagation in particulate materials with different particle shapes using a discrete element method.** Technical report, Intelligent Engineering Systems Laboratory, Massachusetts Institute of Technology, 1994.
- [84] YANG, B.; JIAO, Y. ; LEI, S. **A study on the effects of microparameters on macroproperties for specimens created by bonded particles.** Engineering Computations, 23:607–631, 2006.
- [85] ZHANG, R.; MUSTOE, G. ; NELSON, K. **Simulation of hydraulic phenomena using the discrete element method.** In: CONFERENCE ON DISCRETE ELEMENT METHODS, 1993.
- [86] ZITOVA, B.; FLUSSER, J. **Image registration methods: a survey.** Image and Vision Computing, 21:977–1000, 2003.