

9 Referências Bibliográficas

- [1]. KARNOPP, D. C.; MARGOLIS, D. L. E ROSENBERG, R. C., System Dynamics: A unified approach, 2. ed., John Wiley & Sons, 1990.
- [2]. SPERANZA NETO, M., Redução de Ordem de Modelos Mecânicos Lineares: Uma Abordagem Via Grafos de Ligação, Tese de Doutorado, Pontifícia Universidade Católica do Rio de Janeiro, 1995.
- [3]. BREEDVELD, P. C., Multibond Graph Elements in Physical Systems Theory, Journal of the Franklin Institute, Vol. 319, Nº 1-2, pp. 1-36, 1985.
- [4]. TIERNEGO, M. J. L; BOS, A. M., Modelling The Dynamics and Kinematics of Mechanical Systems with Multibond Graphs, Journal of the Franklin Institute, Vol. 319, Nº 1-2, pp. 37-50, 1985.
- [5]. TIERNEGO, M. J. L; BOS, A. M., Formula Manipulation in the Bond Graph Modelling and Simulation of Large Mechanical Systems, Journal of the Franklin Institute, Vo. 319, Nº 1-2, pp. 51-65, 1985.
- [6]. LORENZ, F.; WOLPER, J., Assigning Causality in the Case of Algebraic Loops, Journal of the Franklin Institute, Vol. 319, Nº 1-2, pp. 237-241, 1985.
- [7]. PACEJKA, H. B., Modelling Complex Vehicle Systems Using Bond Graphs, Journal of the Franklin Institute, Vol. 319, Nº 1-2, pp. 67-81, 1985.
- [8]. BARRETO, J.; LEFÈVRE, J., R-fields in the Solution of Implicit Equations, Journal of the Franklin Institute, Vol. 319, Nº 1-2, pp. 227-236, 1985.
- [9]. DA SILVA, F. R.; SPERANZA NETO, M., Acoplamento de Modelos Mecânicos Através dos Grafos de Ligação, III CEM-NNE, Belém, Vol. II, pp. 392-395, 1994.

- [10]. SPERANZA NETO, M.; DE MORAES, C. D., “Procedimento para Simulação Numérica da Dinâmica de Corpos Rígidos, baseado na Técnica dos Grafos de Ligação”, XIV CILAMCE, Vol. II, pp. 923-932, 1993.
- [11]. FERREIRA, F. M., Modelagem de Sistemas Mecânicos Utilizando Procedimentos Modulares, Dissertação de Mestrado, Instituto Militar de Engenharia, Rio de Janeiro, 2006.
- [12]. MERA, J. M.; VERA, C.; FÉLEZ, J.; ESPERILLA, J. J., Influence of the Roll Axis Consideration in Vehicle Dynamics. Bond Graph Models, capturado de <http://www.scs.org/getDoc.cfm?id=2008>.
- [13]. SASS, L.; MCPHEE, J.; SCHMITKE, C.; FISETTE, P.; D. GRENIER, D.; A Comparison of Different Methods for Modelling Electromechanical Multibody Systems, *Multibody System Dynamics* 12: 209–250, 2004.
- [14]. FAVRE W.; SCAVARDA S., Bond Graph Representation of Multibody Systems with Kinematic Loops, *Journal of Franklin Institute*, Vol. 335B, No. 4, pp. 643-660, 1998.
- [15]. CACHO R.; FELEZ J.; VERA C., Deriving Simulation Models from Bond Graphs With Algebraic Loops. The Extension to Multibond Graph Systems, *Journal of the Franklin Institute* 337, pp. 579-600, 2000.
- [16]. HILLER, M.; KECSKEMÉTHY, A.; WOERNLE, C., A Loop-Based Kinematical Analysis of Complex Mechanisms. *ASME Transactions*, New York, Artigo N° 86-DET-184, 1986, 13 p.
- [17]. HILLER, M.; WOERNLE, C., The Characteristic Pair of Joints - An Effective Approach For The Inverse Kinematic Problem of Robots. *Proceedings of the International Conference on Robotics and Automation*, IEEE, CH2555-1, 1988, 6 p.
- [18]. HILLER, M., Kinematics and Dynamics of Multibody Mechanical Systems. *Proceedings of CISM, Udine*, Cap. 3 and 6, 1994.
- [19]. HILLER, M.; KECSKEMÉTHY, A., Dynamics of Multibody Systems With Minimal Coordinates. *Proceedings of the NATO Advanced Study Institute on Computer-Aided Analysis of Rigid and Flexible Mechanical Systems*. Tróia: Kluwer Academic Publishers, v. 268, p. 61-100, 1994. 619 p. ISBN 0-7923-2839-6.

- [20]. KECSKEMÉTHY, A.; HILLER, M., Automatic Closed-Form Kinematics-Solutions for Recursive Single-Loop Chains. *ASME Journal of Flexible Mechanism, Dynamics, and Analysis*, 1992, DE Vol. 47.
- [21]. KECSKEMÉTHY, A.; HILLER, M.; KRUPP, T., Symbolic Processing of Multiloop Mechanism Dynamics Using Closed-Form Kinematics Solutions. *Multibody Systems Dynamics*, v. 1, n. 1, p. 23-45, 1997.
- [22]. SARZETO, C. A. P., Transformadores Cinemáticos para Mecanismos Básicos. *Anais COBEM/CIDIM*, 1995.
- [23]. COSTA, R. T. N., Modelo de Veículo Tipo 4WS Utilizando Transformadores Cinemáticos, Dissertação de Mestrado, Instituto Militar de Engenharia, Rio de Janeiro, 2001.
- [24]. NEVES, M. R. R., Análise da Estabilidade Lateral de um Veículo Tridimensional, Dissertação de Mestrado, Instituto Militar de Engenharia, Rio de Janeiro, 2002.
- [25]. CHAGAS, C. F. M., Simulação da Vtr Leve Embarcada GE Aerotransportada, Dissertação de Mestrado, Instituto Militar de Engenharia, Rio de Janeiro, 2006.
- [26]. VAN IWAARDEN, M., Modeling a Vehicle with Use of Partial Vehicles and Implementation in MATLAB/Simulink, Master Thesis, University of Leiden, 2003.
- [27]. LEITE, I. C., Análise Dinâmica de Veículos com Estrutura Flexível Através de Técnicas Modulares de Modelagem, Dissertação de Mestrado, Instituto Militar de Engenharia, 2007.
- [28]. GÄFVERT, M.; LINDGÄRDE, O., A 9-DOF Tractor-Semitrailer Dynamic Handling Model for Advanced Chassis Control Studies, *Vehicle System Dynamics*, Volume 41, Issue 1, pp. 51 – 82, 2004.
- [29]. BRANDÃO, F. T. V., Influência da Suspensão na Dirigibilidade e Estabilidade de Veículos em Curva, Dissertação de Mestrado, Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, 1999.
- [30]. RILL, G., Vehicle Modelling for Real Time Applications, *RBCM - J. of the Braz. Soc. Mechanical Sciences*, Vol. XIX - No. 2 - 1997 - pp. 192-206.
- [31]. RILL, G.; CHUCHOŁOWSKI, C., A Modelling Technique for Fast Computer Simulations of Configurable Vehicle System, *Proc. of the 21st*

- International Congress of Theoretical and Applied Mechanics, Warsaw, Poland, 2004.
- [32]. RILL, G.; CHUCHOŁOWSKI, C., Real Time Simulation Of Large Vehicle Systems, Multibody Dynamics 2007, ECCOMAS Thematic Conference, Milano, Italy, 25–28 June 2007.
- [33]. RILL, G., Vehicle Modeling by Subsystems, XI DINAME – International Symposium on Dynamic Problems of Mechanics, Ouro Preto. MG. Brazil, 2006.
- [34]. SAYERS, M. W., Symbolic Computer Methods To Automatically Formulate Vehicle Simulation Codes, Ph.D Thesis, The University of Michigan, 1990.
- [35]. EL-GINDY, M.; ILOSVAI, L., Computer Simulation Study on a Vehicle's Directional Response in Some Severe Manoeuvres – Part 1: Rapid Lane-Change Manoeuvres, Int. Journal of Vehicle Design, vol. 4, no. 4, pp. 386-400, U. K., 1983.
- [36]. KATAYAMA, T.; AOKI, A.; NISHIMI, T., Control Behavior of Motorcycle Riders, Vehicle System Dynamics, 17, pp. 211-229, 1988.
- [37]. SRIDHAR, J.; HATWAL, H., A Comparative Study of Four Wheel Steering Models Using the Inverse Solution, Vehicle System Dynamics, 21, pp. 1-18, 1992.
- [38]. AHRING, E.; MITSCHKE, M., Comparison of All-Wheel Steerings in the System Driver-Vehicle, Vehicle System Dynamics, 24, pp. 283-298, 1995.
- [39]. SMITH, D. E.; STARKEY, J. M., Effects of Model Complexity on the Performance of Automated Vehicle Steering Controllers: Model Development, Validation and Comparison, Vehicle System Dynamics, 24, pp. 163-181, 1995.
- [40]. LUGNER, P.; PLÖCHL, M., Additional 4WS and Driver Interaction, Vehicle System Dynamics, 24, pp. 639-658, 1995.
- [41]. PALKOVICS, L., Effect of the Controller Parameters on the Steerability of the Four Wheel Steered Car, Vehicle System Dynamics, 21, pp. 109-128, 1992.
- [42]. STENSSON, A., ASPLUND, C., KARLSSON, L., The Nonlinear Behavior of a MacPherson Strut Wheel Suspension, Vehicle System Dynamics, 23, pp. 85-106, 1994.

- [43]. WINKLER, C. B., Simplified Analysis of the Steady-State Turning of Complex Vehicles, *Vehicle System Dynamics*, 29, pp. 141-180, 1998.
- [44]. GIM, G.; NIKRAVESH, P., Comprehensive Three Dimensional Models for Vehicle Dynamic Simulations, paper SAE 912579, 1991.
- [45]. COSTA, A. N., Application of Multibody System (MBS) Techniques to Automotive Vehicle Chassis Simulation for Motion Control Studies, Ph.D. Thesis, University of Warwick, Coventry, U.K., 1992.
- [46]. HAUG, E. J., Computer-Aided Kinematics and Dynamics of Mechanical Systems, Volume I: Basic Methods. Allyn and Bacon, Boston, 1989.
- [47]. KIM, SUNG-SOO, A Subsystem Synthesis Method for Efficient Vehicle Multibody Dynamics, *Multibody System Dynamics* 7: 189–207, 2002.
- [48]. WENDLANDT, J. M., Control And Simulation Of Multibody Systems, Ph.D Thesis, University of California at Berkeley, EUA, 1997.
- [49]. SZCZOTKA, M.; WOJCIECH, S., Application of Joint Coordinates and Homogeneous Transformations to Modeling of Vehicle Dynamics, *Nonlinear Dynamics*, DOI 10.1007/s11071-007-9286-2, Published online: 25 July 2007.
- [50]. ALI ATTIA, H., Computational Dynamics of Three-Dimensional Closed-Chains of Rigid Bodies, *Applied Mathematics and Computation*, Volume 172, Issue 1, 1 January, pp 286-304, 2006.
- [51]. BLUNDELL, M.; HARTY, D., *The Multibody Systems Approach to Vehicle Dynamics*, 1a. Ed., Elsevier Butterworth-Heinemann, 2004.
- [52]. RAHNEJAT, H., *Multi-Body Dynamics, Vehicles, Machines and Mechanisms*, SAE, 1998.
- [53]. GONÇALVES, J. P.; AMBRÓSIO, J. A. C., Road Vehicle Modeling Requirements for Optimization of Ride and Handling, *Multibody System Dynamics* 13, pp. 3–23, 2005.
- [54]. FICHERA, G.; LACAGNINA, M.; PETRONE, F.; Modelling of Torsion Beam Rear Suspension by Using Multibody Method, *Multibody System Dynamics* 12: 303–316, 2004.
- [55]. REIMPELL, J.; STOLL, H., *The Automotive Chassis: Engineering Principles*, SAE, 1996.
- [56]. GILLESPIE, T. D., *Fundamentals of Vehicle Dynamics*, Warrendale: SAE, 1992.

- [57]. GENTA, G., *Motor Vehicle Dynamics: Modeling and Simulation*, Singapore: World Scientific Publishing, 1997.
- [58]. BASTOW, D.; HOWARD, G., *Car Suspension and Handling*, 3rd Ed., SAE, 1997.
- [59]. DIXON, J. C., *Tires, Suspension and Handling*, 2nd Ed., SAE, 1996.
- [60]. MILLIKEN, W. F.; MILLIKEN, D.L., *Race Car Vehicle Dynamics*, SAE, 1997.
- [61]. MILLIKEN, W. F.; MILLIKEN, D.L., *Race Car Vehicle Dynamics Workbook*, SAE, 1997.
- [62]. WONG, J. Y., *Theory of Ground Vehicles*, John, Wiley & Sons, 3. ed, 2001.
- [63]. PACEJKA, H. B., *Tire and Vehicle Dynamics*, 1. ed, SAE, 2002.
- [64]. PISINO, E.; GIACOMIN, J.; CAMPANILE, P., Numerical Investigation of the Influence of the Shock Absorber on the Vertical Force Transmissibility of a McPherson Suspension, *Computational Dynamics in Multibody Systems*, pp. 219-238, 1995.
- [65]. JANSEN, S. T. H.; Van OOSTEN, J. J. M., Development and Evaluation of Vehicle Simulation Models for a 4WS application, *Vehicle System Dynamics*, 24, pp. 343-363, 1995.
- [66]. SAYERS, M. W.; HAN, D., A Generic Multibody Vehicle Model for Simulating Handling and Braking, *Vehicle System Dynamics Supplement*, 25, pp. 599-613, 1996.
- [67]. OTTER, M.; ELMQVIST, H.; MATTSSON, S. E., DLR Dynasim: The New Modelica MultiBody Library, *Proceedings of the 3rd International Modelica Conference*, Linköping, Sweden, November 3-4, pp. 311-330, 2003.
- [68]. TURINI, J., R.; VANNUCCI, S. N., Design Characteristics of McPherson Suspensions, SAE paper 973067, 1997.
- [69]. VIEIRA JUNIOR, D.; TIZZO, F.; SOUZA, S. L.; BAPTISTA, E., Fatores que Influenciam na Formação de Vazio em Amortecedores, SAE paper 973098, 1997.
- [70]. BASSO, R.; FABBRI, L.; ZAGATTI, E., A Method to Analyse the Dynamic Behavior of a Motorcycle Front Suspension Equipped with Sequential Dampers, *Vehicle System Dynamics*, 29, pp. 213-230, 1998.

- [71]. SHARP, R. S.; EVANGELOU, S.; LIMBEER, D. J. N., Advances in the Modelling of Motorcycle Dynamics, *Multibody System Dynamics* 12: 251–283, 2004.
- [72]. KARNOPP, D.; SO, S., Energy Flow in Active Attitude Control Suspensions: A Bond Graph Analysis, *Vehicle System Dynamics*, 29, pp. 69-81, 1998.
- [73]. DUARTE De SOUZA, A.V.; Da SILVA, F.R.; SPERANZA NETO, M., Acoplamento das Dinâmicas Vertical e Lateral de um Veículo Terrestre. Um Modelo através dos Grafos de Ligação, IX Simpósio de Engenharia Automotiva, SIMEA-AEA, São Paulo, SP, pp 55-64, 1997.
- [74]. BOS, A.M., A Bond Graph Approach to The Modelling of a Motorcycle, *Vehicle System Dynamics*, Volume 16, Issue S1 & 6, pp. 289 – 314, 1987.
- [75]. JAUME, D.; VERGÉ, M.; DELHOM, M.; ROYER, P., Bond Graph Modelling : a good communication tool between University and Industry., *Proceedings of ICEE-1998*, Rio de Janeiro, Brazil, 1998.
- [76]. ANDREASSON, J., Vehicle Dynamics Library, *Proceedings of the 3rd International Modelica Conference*, Linköping, Sweden, November 3-4, pp. 11-18, 2003.
- [77]. MARGOLIS, D.; SHIM, T., A bond graph model incorporating sensors, actuators, and vehicle dynamics for developing controllers for vehicle safety, *Journal of the Franklin Institute*, 338, pp. 21-34, 2001.
- [78]. SAĞIRLI, A.S.; BOĞOÇLU, M. E.; , ÖMÜRLÜ, V. E., Modeling the Dynamics and Kinematics of a Telescopic Rotary Crane by the Bond Graph Method (Part I), *Nonlinear Dynamics* 33: 337–351, 2003.
- [79]. SAĞIRLI, A.S.; BOĞOÇLU, M. E.; , ÖMÜRLÜ, V. E., Modeling the Dynamics and Kinematics of a Telescopic Rotary Crane by the Bond Graph Method (Part II), *Nonlinear Dynamics* 33: 353–367, 2003.
- [80]. MERZOUKI R., OULD-BOUAMAMA B., DJEZIRI M. A., BOUTELDJA M., Modelling and Estimation of Tire–Road Longitudinal Impact Efforts Using Bond Graph Approach, *Mechatronics* 17 pp. 93–108, 2007.
- [81]. SPERANZA NETO, M., MARTINEZ, J. F. e DA SILVA, F.R., Modelo para Análise de Trajetória de Veículo sobre suspensão via Bond Graphs,

- VI Simpósio de Engenharia Automotiva, pp. 941-951, São Paulo-SP, 1991.
- [82]. SPERANZA NETO, M., DA SILVA, F.R. e MARTINEZ, J., Abordagem da Dinâmica de Veículos Terrestres como um Caso Particular da Dinâmica de Sistema, VI Simpósio de Engenharia Automotiva, pp. 953-967, São Paulo-SP, 1991.
- [83]. AZEVEDO NETO, J. M.; SPERANZA NETO, M., Modeling the Components of an Internal Combustion Engine Using the Bond Graphs Technique, SAE BRASIL 92, São Paulo, paper SAE 921446, 1992.
- [84]. SPERANZA NETO, M.; DA SILVA, F. R., MARTINEZ, J. F., Design Methodology in Vehicle Dynamics, Using The Procedures of Modelling, Simulation and Analysis of System Dynamics, SAE BRASIL 92, São Paulo, paper SAE 921480, 1992.
- [85]. DA SILVA, F. R.; SPERANZA NETO, M., Modelling of The Vehicles and Structures Dynamics Interactions, SAE BRASIL 92, São Paulo, paper SAE 921466, 1992.
- [86]. DUARTE DE SOUZA, A. V.; DA SILVA, F. R.; SPERANZA NETO, M., Acoplamento das Dinâmicas Vertical e Lateral de um Veículo Terrestre. Um Modelo através dos Grafos de Ligação, IX Simpósio de Engenharia Automotiva, SIMEA-AEA, São Paulo, SP, pp 55-64, 1997.
- [87]. DE MELO, M. R. R.; SPERANZA NETO, M., Acoplamento dos Componentes de um Sistema de Transmissão de um Veículo Terrestre através do Fluxo de Potência, COBEM 99, 1999.
- [88]. BRANDÃO, F. T. V.; SPERANZA NETO, M., Acoplamento das Dinâmicas Vertical e Lateral de um Veículo Terrestre, submetido ao COBEM 99, 1999.
- [89]. DE MELO, M. R. R.; MACHADO, J. A.; SPERANZA NETO, M., Um Modelo para Simulação Computacional do Sistema Transmissão de um Veículo Terrestre, SIMEA 99, 1999.
- [90]. WELLSTEAD, P.E., Introduction to Physical Modelling, Academic Press, 1979.
- [91]. SHABANA, A. A., Computational Dynamics. 1. ed. New York: John Wiley & Sons, 1994.

- [92]. GREENWOOD, D. T. Principles of Dynamics. 2.ed. New Jersey: Prentice Hall, 552 p. ISBN 0-13-709981-9, 1988.
- [93]. ROBERSON, R. E.; SCHWERTASSEK, R., Dynamic of Multibody Systems, Springer-Verlag, 1988.
- [94]. Bosch Automotive Handbook, 6a. ed., SAE, 2006.
- [95]. AVENA, S. R, Modelos de Manipuladores Robóticos Utilizando Grafos de Ligação, Dissertação de Mestrado, Instituto Militar de Engenharia, Rio de Janeiro, 1992.
- [96]. L. FOX, Numerical Solutions of Ordinary and Partial Differential Equations, Palo Alto: Addison-Wesley, pp. 24-25, 1962.
- [97]. SIMNON for Windows.
<http://www.mpassociates.gr/software/catalog/sci/simnon/simnon.html>
- [98]. SMITH, R. C.; HAUG, E. J.; DADS — Dynamic analysis and design system - Multibody Systems Handbook, 1990 - Springer Verlag.
- [99]. ADAMSKI, D.; SCHUSTER, C.; HILLER, M., Advances in Modelling of Mechatronic Systems: The Toolset FASIM_C++ for the Simulation of Vehicle Dynamics., J. Braz. Soc. Mech. Sci. vol.21 no.4 Rio de Janeiro Dec. 1999.
- [100]. MSC.ADAMS, <http://www.mscsoftware.com/products/adams.cfm>
- [101]. TESIS veDYNA, <http://www.thesis.de/en/index.php?page=544>
- [102]. RULKA, W.; EICHBERGER, A.. SIMPACK An Analisis and Design Tool for Mechabical Systems., Vehicle System Dynamics, vol. 22, pp. 112-126, 1993.
- [103]. SAYERS, M. W., AUTOSIM, Vehicle System Dynamics, vol. 22, pp. 53-56, 1993.
- [104]. <http://www.dynasim.se/index.htm>
- [105]. FRITZSON, P.; ENGELSON, V., Modelica - A Unified Object-Oriented Language for System Modeling and Simulation, Lectures Notes in Computer Science, Vol. 1445/1998, Abstract.
- [106]. VERHEUL, C.H.; PACEJKA, H. B., Bond Graph Based Modelling Using Macros, An Introduction To The Program BAMMS, Vehicle System Dynamics, Vol. 22, Issue S1, pp. 57 – 60, 1993.

10 Bibliografia

- [1]. BURTON, T.D., Introduction to Dynamic Systems Analysis, McGraw-Hill, 1994.
- [2]. COCHIN, I., Analysis and Design of Dynamic Systems, Harper & Row, Publishers, 1980.
- [3]. LJUNG, L., GLAD, T., Modeling of Dynamic Systems, Prentice Hall, 1994.
- [4]. ROSENBERG, R.C., KARNOPP, D.C., Introduction to Physical System Dynamics, McGraw-Hill, 1983.
- [5]. HAUG, E. J., Intermediate Dynamics. 1. ed.. New Jersey: Prentice Hall, 1992.
- [6]. CRAIG, R. R. JR., Structural Dynamics. 1.ed. New York: John Wiley & Sons, 528p. ISBN 0-471-87715-8, 1981.
- [7]. CRANDALL, S. H., KARNOPP, D. C., KURTZ, E. F. JR., PRIDMORE-BROWN, D. C. Dynamics of Mechanical and Eletromechanical Systems. 1.ed. EUA: McGraw-Hill, 464 p. ISBN 67-28081, 1968.
- [8]. Van VALKENBURGH, P., Race Car Engineering and Mechanics, HP Books, 1992.
- [9]. CHAMPION, R., Build Your Own Sports Car for as Little as L250, Haynes Publishing, 1996.
- [10]. STANIFORTH, A., Race and Rally Car Source Book, 4th. Ed., Haynes Publishing, 1997.
- [11]. SMITH. C., The Carroll Smith Race Car Set, Vol. 1 to 6, SAE, 1996.
- [12]. HANEY, P., Braun, J., Inside Race Technology, SAE, 1995.
- [13]. SMITH, S., Advanced Race Car Suspension Development, S.S.A. Publications, 1995.
- [14]. ELLIS, J. R., Vehicle Dynamics, Lodon Business Book Limied, 1ª. Ed., 1969.
- [15]. SANTOS, I. F., Dinâmica de Sistemas Mecânicos, Makron Books, São Paulo, 2001.
- [16]. WYLIE, C. R., BARRETT, L. C., Advanced Engineering Mathematics, 5a. ed. McGraw-Hill, 1985.