

## Bibliography

- [Ann95] A. M. Annaswamy, M. Fleifil, Z. Ghoniem and A. F. Ghoniem, A Feedback Model of Thermoacoustic Instability in Combustion Process, *Report 9502, Dept. of Mechanical Engineering, MIT.* (1995)
- [Ann97] A. M. Annaswamy, M. Fleifi, J. P. Hathou, and A. F. Ghoniem, An input-output model of thermoacoustic instability and active control design, *Report 9705, Dept. of Mechanical Engineering, MIT.* (1997)
- [Ban98] S. Banerjee, J.V. Cole, K. F. Jense, Nonlinear Model Reduction Strategies for Rapid Thermal Processing Systems, *IEEE Transactions on Semiconductor Manufacturing, Vol. 11, No.2, pp 266-275* (1998)
- [Bau99] W. T. Baumann, W. R. Saunders, U. Vandsburger, System Design Methods for Simultaneous Optimal Control of Combustion Instabilities and Efficiency, *ONR Conference Paper* (1999)
- [Bay99] J. S. Bay, *Fundamental of Linear State Space System*, McGraw-Hill (1999)
- [Ben90] J. S. Bendat, *Nonlinear System Analysis and Identification From Random Data*, John Wiley & Sons (1990)
- [Ber91] G. Berkooz, Observation on the Proper Orthogonal Decomposition, *Studies in Turbulence*, edited by T. B. Gatski, S. Sarkar and C. G. Speziale, Springer-Verlag, New York (1991)
- [Ber93] G. Berkooz, P. Holmes, J. L. Lumley, The Proper Orthogonal Decomposition in the Analysis of Turbulent Flows, *Annual Review of Fluid Mechanics*, Vol. 25, pp. 539-575 (1993)
- [Cla80] J. F. Clarke, A. C. Mcintosh, The influence of a flame-holder on plane flame, including its static stability, *Proceedings of Royal Society London, A. 372*, pp. 367-392 (1980)
- [Cla85] P. Clavin, Dynamic Behavior of Premixed Flame Fronts in Laminar and Turbulent Flows, *Progress in Energy and Combustion Science*, Vol.11, pp.1-59 (1985)
- [Cul73] F. E. C. Culick, The Stability of One-Dimensional Motions in a Rocket Motor, *Combustion Science & Technology*, Vol. 7 pp.165-175 (1973)
- [Cul76] F. E. C. Culick, Nonlinear Behavior of Acoustic Waves in Combustion Chambers-I , *Combustion Science & Technology*, Vol. 3 pp.715-734 (1976)

- [Cul76] F. E. C. Culick, Nonlinear Behavior of Acoustic Waves in Combustion Chambers-II, *Combustion Science & Technology*, Vol. 3 pp.735-757 (1976)
- [Cul87] F. E. C. Culick, A Note on Rayleigh's Criterion, *Combustion Science & Technology*, Vol. 56, pp. 159-166 (1987)
- [Dan71] C. Daniel, F. Wood, J. Gorman, Fitting Equations to Data, Wiley-Interscience (1971)
- [Dan78] R. W. Daniels, An Introduction to Numerical Methods and Optimization Techniques, North-Holland, New York (1978)
- [Fan99] C. A. Fannin, W. R. Saunders, M. A. Vaudrey, B. Eisenhower and U. Vandsburger, Analytical and Practical Considerations for Control of Thermoacoustic Instabilities, *37<sup>th</sup> AIAA Aerospace Sciences Meeting and Exhibit*, Jan, (1999)
- [God93] K. Godfrey, Perturbation Signals for System Identification, Prentice Hall (1993)
- [Gra96] M. D. Graham, I. G. Kevrekidis, Alternative Approaches to the Karhunen-Loeve Decomposition for Model Reduction and Data Analysis, *Computers Chemical Engineering*, Vol. 20, No 5, pp. 495-506 (1996)
- [Hab00] L. C. Haber, An Investigation into the Original Measurement and Application of Chemiluminescent Light Emissions from Premixed Flames, Thesis of Virginia Tech (2000)
- [Hat97] J. P. Hathout, M. Fleifil, J. W. Rumsey, A. M. Annaswamy and A. F. Ghoniem, Model-Based Analysis and Design of Active Control of Thermoacoustic Instability, *Proceedings of the 1997 IEEE International Conference on Control Applications*, pp.830-835. (1997)
- [Hib99] J. R. Hibshman, J. M. Cohen, A. Banaszuk, T. J. Anderson and H. A. Alholm, Active Control of Combustion Instability in a Liquid-Fueled Sector Combustor, *ASME/IGTI*, June' (1999)
- [Hig02] B. Higgins, *J. of Natural Phil. Chem. Arts* 1, 129 (1802)
- [Hro87] T. V. Hromadka, C. C. Yen, G. F. Pinder, The Best Approximation Method: An Introduction, Springer-Verlag (1987)
- [Hsi77] T. C. Hsia, System Identification: Least Squares Methods, Lexington Books (1997)
- [Jou79] G. Joulin, Linear Stability Analysis of Nonadiabatic Flames: Diffusional-Thermal Model, *Combustion and Flame*, Vol. 35, pp. 139-153 (1979)
- [Kai98] K. Kailasanath and E. J. Gutmark, *Propulsion combustion: fuels to emissions* edited by G.D. Roy, pp.129-172, Taylor & Francis (1998).

- [Kee94] R. J. Kee, J. F. Grcar, M. D. Smooke, J. A. Miller, A Fortran Program for Modelling Steady Laminar One-Dimensional Premixed Flames, *Sandia Report*, SAND85-8240 (1985)
- [Kha01] V. Khanna, A Study of the Dynamics of Laminar and Turbulent Fully and Partially Premixed Flames, PhD Dissertation of Virginia Tech (2001)
- [Kir90] M. Kirby, L. Sirovich, Application of the Karhunen-Loeve Procedure for the Characterization of Human Faces, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol.12, No.1, pp 103-108 (1990)
- [Kno97] P. Knoop, F. E. C. Culick, E. E. Zukoski. Extension of the stability of motions in a combustion chamber by nonlinear active control based on hysteresis, *Combustion Science and Technology* Vol.123: (1-6) 363-376 (1997)
- [Kol92] W. R. Kolk, R. A. Lerman, Nonlinear System Dynamics, *Van Nostrand Reinhold*, New York (1992)
- [Kuo86] K. K. Kuo, Principles of Combustion, *Wiley*, New York (1986)
- [Lju94] L. Ljung, Glad T., Modeling of Dynamic Systems, Prentice Hall (1994)
- [Lju99] L. Ljung, System Identification: Theory for the User, Second Edition, Prentice Hall (1999)
- [Ly98] H. V. Ly, H. T. Tran, Proper Orthogonal Decomposition for Flow Calculations and Optimal Control in a Horizontal CVD Reactor (1998)
- [Ma98] X. Ma, A. F. Vakakis, Karhunen-Loeve Decomposition of the Transient Dynamics of a Multibay Truss, *AIAA Journal*, Vol. 37, No.8, (1998)
- [Mar78] S. B. Margolis, Time-Dependent Solution of a Premixed Laminar Flame, *Journal of Computational Physics*, Vol.27, pp.410-427 (1978)
- [Mar80] S. B. Margolis, Bifurcation Phenomena in Burner-Stabilized Flames, *Combustion Science & Technology*, Vol. 22, pp. 143-169. (1980)
- [Mas93] S. F. Masri, A. G. Chassiakos, T. F. Caughey, Identification of Nonlinear Dynamics Systems Using Neural Networks, *Journal of Applied Mechanics*, Vol. 60, pp. 123-133 (1993)
- [Moo89] D. J. Mook, Estimation and Identification of Nonlinear Dynamic Systems, *AIAA Journal*, Vol. 27, pp.968-974 (1989)
- [Mat79] B. J. Matkowsky, G. I. Sivashinsky, An Asymptotic Derivation of Two Models in Flame Theory Associated with the Constant Density Approximation, *SIAM J. Applied Math*, Vol.37, No.3, pp. 687-699 (1979)
- [Mat92] Math Works Inc., Control System Toolbox, *Matlab*<sup>®</sup> version5.2. (1992)

- [Mos97] L. Boshoff-Mostert, H. J. Viljoen, Analysis of Combustion-Driven Acoustics, *Chemical Engineering Science*, Vol. 53, No. 9, pp.1679-1687 (1998)
- [Nor01] L. Nord, A Thermoacoustic Characterization of a Rijke-Type Tube Combustor, Thesis of Virginia Tech (2001)
- [Par96] H. M. Park, D. H. Cho, The Use of the Karhunen-Loeve Decomposition for the Modeling of Distributed Parameter Systems, *Chemical Engineering Science*, Vol. 51, No.1, pp.81-98 (1996)
- [Per98] A. A. Peracchio, W. M. Proscia, Nonlinear Heat-Release/Acoustic Model for Thermoacoustic Instability in Lean Premixed Combustors, *ASME/IGTI Turbo Expo '98*, June, (1998)
- [Pet97] C. Petrov, A. Ghoniem, A Uniform Strain Model of Elemental Frames in Turbulent Combustion Simulations, *Combustion and Flame*, Vol.111, pp.47-64 (1997)
- [Put71] A. A. Putnam, *Combustion –Driven Oscillations in Industry*, Elsevier, NewYork (1971)
- [Qui98] D. D. Quinn, A Simplified Model for the Investigation of Acoustically Driven Combustion Instabilities, *3<sup>rd</sup> AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, July, (1998)
- [Rau93] R. L. Raun, M. W. Beckstead, J. C. Finlison and K. P. Brooks, *Progress In Energy And Combustion Science*, Vol. 19, pp. 313-364 (1993)
- [Rus96] J. F. Rusling, T. F. Kumosinski, *Nonlinear Computer Modeling of Chemical and Biochemical Data*, Academic Press (1996)
- [Sea91] G. Searby, Acoustics Instability in Premixed Flames, *Combustion Science and Technology*, Vol.81, pp. 221-231 (1991)
- [Sea91] G. Searby, D. Rochwerger, A Parametric Acoustic Instability in Premixed Flames, *Journal of Fluid Mechanics*, Vol. 231, pp529-543 (1991)
- [Shv98] S. Y. Shvartsman, I. G. Kevrekidis Nonlinear Model Reduction for Control of Distribution Systems: a Computer-Assisted Study, *AIChE Journal*, Vol.44, No.7, pp.1579-1594 (1998)
- [Sir86] L. Sirovich, Turbulence and the Dynamics of Coherent Structures Part I: Coherent Structure, *Quarterly of Applied Mathematics*, Vol. XLV, No. 3, pp. 561-571 (1986)
- [Spa56] D. B. Spalding, *The Theory of Flame Phenomena with a Chain Reaction*. Vol.249, A957. (1956)
- [Ste91] J. D. Sterling, E. E. Zukoski, Nonlinear Dynamics of Laboratory Combustor Pressure Oscillations, *Combustion Science and Technology*, Vol.77, pp. 225-238 (1991)

- [Ste93] J. D. Sterling, Nonlinear Analysis and Modelling of Combustion Instabilities in a Laboratory Combustor, *Combustion Science and Technology*, Vol. 89, pp.167-169 (1993)
- [Tay70] P. J. Taylor, The Stability of the Du Fort-Frankel Method for the Diffusion Equation with Boundary Conditions Involving Space Derivatives, *The Computer Journal*, Vol. 13, No.1 pp. 92-97 (1970)
- [Tha62] G. J. Thaler, *Analysis and Design of Nonlinear Feedback Control Systems*, McGraw-Hill (1962)
- [The98] A. Theodoropoulou, R. A. Adomaitis, E. Zafiriou, Model Reduction for Optimization of Rapid Thermal Chemical Vapor Deposition Systems, *IEEE Transactions on Semiconductor Manufacturing*, Vol.11, No.1, pp85-98 (1998)
- [Tur96] S. R. Turns, *An Introduction to Combustion: Concept and Applications*, McGraw-Hill. (1996)
- [Unb87] H. Unbehauen, G. P. Rao, Identification of Continuous Systems, North-Holland (1987)
- [Van92] U. Vandsburger, K. MaManus, C. T. Bowman, Effect of Fuel Spray Vaporization on the Stability Characteristics of a Dump Combustion, *AIAA Paper 89-2436* (1989)
- [Van99] U. Vandsburger, Lecture notes for combustion course, Department of Mechanical Engineering, Virginia Tech (1999)
- [Wal82] E. Walter, *Identifiability of State Space Models*, Springer-Verlag Berlin Heidelberg New York. (1982)
- [Wan97] T. Wang, and V. Yang, Combustion Response of a Premixed Swirl Injector to Longitudinal Acoustic Oscillations, *AIAA Paper 97-0694* (1997)
- [Wes81] C. K. Westbrook, Simplified Reaction Mechanisms for the Oxidation of Hydrocarbon Fuels in Flames, *Combustion Science and Technology*, Vol. 27, pp. 31-43, (1981)
- [Yas89] K. Yasuda, S. Kawamura, A Nonparametric Identification Technique for Nonlinear Vibratory Systems, *JSME International Journal*, Series III, Vol. 32, pp. 369-372 (1989)
- [Yas97] K. Yasuda, K. Kamiya, M. Komakine, Experimental Identification Technique of Vibrating Structures with Geometrical Nonlinearity, *Journal of Applied Mechanics*, Vol. 64, pp. 275-280 (1997)
- [Zie81] Z. Ziegler, *Approximation Theory and Applications*, Academic Press (1981)

[Zin00] C. E. Johnson, Y. Neumeier, E. Lubarsky, J. Y. Lee, M. Neumaier and B. T. Zinn, Suppression of Combustion Instabilities in a Liquid Fuel Combustor Using a Fast Adaptive Control Algorithm, *38<sup>th</sup> Aerospace Sciences Meeting & Exhibit*, January (2000)