

Publications Thermo-Fluid Dynamics Group

September 3, 2023

Reviewed journal articles or conference proceedings

1. G. Varillon, P. Brokoff, and W. Polifke. Global Linear Stability Analysis of a Slit Flame Subject to Intrinsic Thermoacoustic Instability. *ICSV29 - 29th International Congress on Sound and Vibration*, Prague, CZ, Sept. 2023. IIAV.
2. C. M. Douglas, W. Polifke, and L. Lesshafft. Flash-back, blow-off, and symmetry breaking of premixed conical flames. *Comb. & Flame*, 2023.
3. P. Bonnaire and W. Polifke. Analysis of High-Frequency Dynamics of a Reacting Jet in Crossflow Based on Large Eddy Simulation. *J. Eng. Gas Turbines and Power*, 2023.
4. M. Rywik, A. Zimmermann, A. J. Eder, E. Scoletta, and W. Polifke. Spatially resolved modeling of the nonlinear dynamics of a laminar premixed flame with a multilayer perceptron - convolution autoencoder network. *J. Eng. Gas Turbines and Power*, 2023.
5. A. J. Eder, B. Dharmaputra, M. Désor, C. F. Silva, A. M. Garcia, B. Schuermans, N. Noiray, and W. Polifke. Generation of Entropy Waves by Fully Premixed Flames in a Non-Adiabatic Combustor with Hydrogen Enrichment. *J. Eng. Gas Turbines and Power*, 2023.
6. T. L. Kaiser, G. Varillon, W. Polifke, F. Zhang, T. Zirwes, H. Bockhorn, and K. Oberleithner. Modelling the response of a turbulent jet flame to acoustic forcing in a linearized framework using an active flame approach. *Combust. Flame*, 253(7):112778, 2023.
7. N. Purwar and W. Polifke. Preserving Transfer-behavior in Model Order Reduction for Thermoacoustic Stability Analysis. *J. Sound and Vibration*, 565:117862, 2023.
8. P. Bonnaire and W. Polifke. Analysis of High-Frequency Dynamics of a Reacting Jet in Crossflow Based on Large Eddy Simulation. *ASME Turbo Expo 2023 Turbomachinery Technical Conference & Exposition*, 2023.
9. M. Rywik, A. Zimmermann, A. J. Eder, E. Scoletta, and W. Polifke. Spatially resolved modeling of the nonlinear dynamics of a laminar premixed flame with a multilayer perceptron - convolution autoencoder network. *ASME Turbo Expo 2023 Turbomachinery Technical Conference & Exposition*, GT2023-102543, Boston, MA, USA, 2023.
10. A. J. Eder, B. Dharmaputra, M. Désor, C. F. Silva, A. M. Garcia, B. Schuermans, N. Noiray, and W. Polifke. Generation of entropy waves by fully premixed flames in a non-adiabatic combustor with hydrogen enrichment. *ASME Turbo Expo 2023 Turbomachinery Technical Conference & Exposition*, Boston, MA, USA, 2023. American Society of Mechanical Engineers.
11. K. J. Yong, C. F. Silva, G. J. J. Fournier, and W. Polifke. Categorization of thermoacoustic modes in an ideal resonator with phasor diagrams. *Combustion and Flame*, 249:112605, Jan. 2023.
12. A. M. Garcia, S. Le Bras, and W. Polifke. Effect of hydrogen addition on the consumption speed of lean premixed laminar methane flames exposed to combined strain and heat loss. *Combustion Theory and Modelling*, 27(4):584–604, 2023.
13. C. F. Silva. Intrinsic thermoacoustic instabilities. *Progress in Energy and Combustion Science*, 95:101065, 2023.

14. A. J. Eder, C. F. Silva, M. Haeringer, J. Kuhlmann, and W. Polifke. Incompressible versus compressible large eddy simulation for the identification of premixed flame dynamics. *Int. J. Spray and Combustion Dynamics*, 15(1):16–32, 2023.
15. G. J. J. Fournier, F. Schaefer, M. Haeringer, C. F. Silva, and W. Polifke. Interplay of Clusters of Acoustic and Intrinsic Thermoacoustic Modes in Can-Annular Combustors. *Journal of Engineering for Gas Turbines and Power*, 144(12):121015, Dec. 2022.
16. M. Merk, P. E. Buschmann, J. Moeck, and W. Polifke. The Nonlinear Thermoacoustic Eigenvalue Problem and Its Rational Approximations: Assessment of Solution Strategies. *Journal of Engineering for Gas Turbines and Power*, Sept. 2022.
17. A. M. Garcia, S. Le Bras, J. Prager, M. Haeringer, and W. Polifke. Large eddy simulation of the dynamics of lean premixed flames using global reaction mechanisms calibrated for CH₄-H₂ fuel blends. *Physics of Fluids*, 34(9):095105, 2022.
18. J. Kuhlmann, A. Lampmann, M. Pfitzner, and W. Polifke. Assessing accuracy, reliability and efficiency of combustion models for prediction of flame dynamics with large eddy simulation. *Physics of Fluids*, 34(9):095117, 2022.
19. J. Kuhlmann, S. Marragou, I. Boxx, T. Schuller, and W. Polifke. LES based prediction of technically premixed flame dynamics and comparison with perfectly premixed mode. *Physics of Fluids*, 34(8):10, 2022.
20. M. Rywik, P. Kasthuri, I. Boxx, I. Chterevev, W. Polifke, and R. I. Sujith. Turbulence and Heat Release Rate Network Structure in Hydrogen-Enriched Combustion. *Proc. Comb. Inst.*, 39(4):4701–4710, 2022.
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36. N. A. K. Doan, W. Polifke, and L. Magri. Autoencoded Reservoir Computing Approach for Turbulence Learning. *Lecture Notes in Computer Science - ICCS 2021*, 2021.
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