

Publications Thermo-Fluid Dynamics Group

November 2, 2023

Reviewed journal articles or conference proceedings

1. A. M. Garcia, S. Le Bras, J. Prager, I. Boxx, and W. Polifke. Impact of H₂-enrichment on the response of a partially premixed CH₄-air flame to velocity and equivalence ratio fluctuations. *Combustion and Flame*, 2024.
2. P. Bonnaire and W. Polifke. Analysis of High-Frequency Dynamics of a Reacting Jet in Crossflow Based on Large Eddy Simulation. *Journal of Engineering for Gas Turbines and Power*, pages 1–29, Sept. 2023.
3. 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.
4. 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. *Journal of Engineering for Gas Turbines and Power*, 145(11), 2023.
5. M. Hiestermann, M. Haeringer, M. Désor, and W. Polifke. Comparison of non-premixed and premixed flamelets for ultra WET Aero Engine Combustion Conditions. *GPPS23*, (GPPS-TC-2023-0277):18, 2023.
6. C. M. Douglas, W. Polifke, and L. Lesshafft. Flash-back, blow-off, and symmetry breaking of premixed conical flames. *Comb. & Flame*, 2023.
7. 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.
8. 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.
9. N. Purwar and W. Polifke. Preserving Transfer-behavior in Model Order Reduction for Thermoacoustic Stability Analysis. *J. Sound and Vibration*, 565:117862, 2023.
10. P. Bonnaire and W. Polifke. Analysis of High-Frequency Dynamics of a Reacting Jet in Crossflow Based on Large Eddy Simulation. *Volume 3B: Combustion, Fuels, and Emissions*, page V03BT04A010, Boston, Massachusetts, USA, June 2023. American Society of Mechanical Engineers.
11. 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.
12. 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*, volume Volume 3B: Combustion, Fuels, and Emissions, page V03BT04A009, Boston, MA, USA, 2023. American Society of Mechanical Engineers.

13. 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, Mar. 2023.
14. 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.
15. C. F. Silva. Intrinsic thermoacoustic instabilities. *Progress in Energy and Combustion Science*, 95:101065, Mar. 2023.
16. 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. *International Journal of Spray and Combustion Dynamics*, 15(1):16–32, 2023.
17. 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.
18. M. Merk, P. E. Buschmann, J. P. 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*, 145(2):021028, Feb. 2023.
19. 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.
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24. M. Merk, P. E. Buschmann, J. P. Moeck, and W. Polifke. The nonlinear thermoacoustic eigenvalue problem and its rational approximations: Assessment of solution strategies. *ASME Turbo Expo 2022 Turbomachinery Technical Conference and Exposition*, GT2022-79653, Rotterdam, NL, 2022. ASME.
25. M. Haeringer and W. Polifke. Self-excited Combustion Dynamics in Multiburner Systems. *FVV Informationstagung Turbomaschinen*, volume R602, page 42, Würzburg, Germany, Mar. 2022. FVV.
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34. F. Schily and W. Polifke. Low-Order Model of the Dynamics and Start-up of a Pulsating Heat Pipe. *Frontiers in Heat and Mass Transfer*, 17(16):15, 2021.
35. S. Kulkarni, S. Guo, C. F. Silva, and W. Polifke. Confidence in Flame Impulse Response Estimation From Large Eddy Simulation With Uncertain Thermal Boundary Conditions. *Journal of Engineering for Gas Turbines and Power*, 143(12):121002, Dec. 2021.
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52. G. J. J. Fournier, M. Haeringer, C. F. Silva, and W. Polifke. Low-Order Modeling to Investigate Clusters of Intrinsic Thermoacoustic Modes in Annular Combustors. *Journal of Engineering for Gas Turbines and Power*, 143(4):041025, Apr. 2021.
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