Stanford

Guillaume Vignat

Postdoctoral Scholar, Mechanical Engineering

Bio

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Unlisted School (2020)
- Ingenieur, Centrale Supelec (2017)
- PhD, University Paris-Saclay, CentraleSupelec , Reacting flows (2020)

STANFORD ADVISORS

- Matthias Ihme, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Improving volume-averaged simulations of matrix-stabilized combustion through direct X-ray µCT characterization: Application to NH₃/ H₂-air combustion** *COMBUSTION AND FLAME*
  Zirwes, T., Vignat, G., Toro, E. R., Boigne, E., Younes, K., Trimis, D., Ihme, M.
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- **Swirling spray flames dynamical blow out induced by transverse acoustic oscillations** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
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- **Combustion of lean ammonia-hydrogen fuel blends in a porous media burner** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
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- **Experimental and numerical investigation of flame stabilization and pollutant formation in matrix stabilized ammonia-hydrogen combustion** *COMBUSTION AND FLAME*
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- **Dynamics and structure of detonations in stratified product-gas diluted mixtures** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Brouzet, D., Vignat, G., Ihme, M.
  2023; 39 (3): 2855-2864
- **Comparison of Flame Describing Functions Measured in Single and Multiple Injector Configurations** *JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER-TRANSACTIONS OF THE ASME*
  Soundararajan, P., Durox, D., Vignat, G., Renaud, A., Beaunier, J., Candel, S.
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- **Do flame describing functions suitably represent combustion dynamics under self-sustained oscillations?** *JOURNAL OF SOUND AND VIBRATION*
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- **The suitability of different swirl number definitions for describing swirl flows: Accurate, common and (over-) simplified formulations** *PROGRESS IN ENERGY AND COMBUSTION SCIENCE*
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- **A Joint Experimental and Large Eddy Simulation Characterization of the Liquid Fuel Spray in a Swirl Injector** *JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER-TRANSACTIONS OF THE ASME*
  Vignat, G., Rajendram Soundararajan, P., Durox, D., Vie, A., Renaud, A., Candel, S.
  2021; 143 (8)
- **Improvement of lean blow out performance of spray and premixed swirled flames using nanosecond repetitively pulsed discharges** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Vignat, G., Minesi, N., Soundararajan, P., Durox, D., Renaud, A., Blanchard, V., Laux, C. O., Candel, S.
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- **Investigation of transient PVC dynamics in a strongly swirled spray flame using high speed planar laser imaging of SnO2 microparticles** *COMBUSTION AND FLAME*
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- **Combustion Dynamics of Annular Systems** *COMBUSTION SCIENCE AND TECHNOLOGY*
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- **HIGH AMPLITUDE COMBUSTION INSTABILITIES IN AN ANNULAR COMBUSTOR INDUCING PRESSURE FIELD DEFORMATION AND FLAME BLOW-OFF**
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- **ANALYSIS OF PERFORMANCE SENSITIVITY TO GEOMETRICAL VARIATIONS OF A MODERN HELICOPTER ENGINE COMBUSTOR USING LES SIMULATIONS**
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