Kabilan Baskaran

Assistant Professor, IIT (ISM) Dhanbad

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RESEARCH INTERESTS

- Aerodynamics and aeroacoustics of propellers
- Experimental methods for thermo-fluid science

RECENT EMPLOYMENT HISTORY AND EDUCATION

Assistant Professor March. 2022 – Present

IIT (ISM) Dhanbad, Mechanical Engineering *Dhanbad, India*

Postdoctoral Research Associate Oct. 2020 – March 2022

University of Bristol, Mechanical Engineering *Bristol, UK*

Doctor of Philosophy Jan. 2015 – May. 2021

Indian Institute of Technology, Mechanical Engineering *Chennai, India*

Master of Science Jan. 2015 – May. 2021

Indian Institute of Technology, Mechanical Engineering *Chennai, India*

Bachelor of Engineering May. 2009 - Apr. 2012

Dhanalakshmi Srinivasan College, Aeronautical Engineering *Chennai, India*

TEACHING AND SUPERVISION EXPERIENCE

University of Bristol Oct. 2020 - Present

Guided and co-supervised 2 PhD students. Held individual weekly meetings, conducted training sessions for a variety of topics spanning fundamental fluid mechanics, aerodynamics to advanced experimental methods.

Indian Institute of Technology Jan. 2015 – May. 2021

Chennai, India

- Teaching assistant of measurements in thermal engineering course.
- Teaching assistant of applied thermodynamics course.
- Teaching assistant of jet flows and acoustics course.
- Guided and helped to supervise 4 BE students.

RESEARCH EXPERIENCE

University of Bristol

- Worked as a PDRA for HORIZON 2020 - SilentProp project.
- CAME Pump-Priming Grant for Innovative Interdisciplinary Research 2021

Indian Institute of Technology

- Studied aeroacoustic characteristics and noise control of pipe-cavity jets.
- Developed novel passive jet noise and flow control.
- Investigated flow dynamics and acoustics of premixed flames.

PUBLICATIONS & PRESENTATIONS

Journal Publications

[J1] **Baskaran, K.,** Parimalanathan, S. K., Dhamanekar, A., & Srinivasan, K. (2018). "Effects of passive grids on pipe and orifice jet noise". *Journal of Sound and Vibration*, *435*, 218-233.

[J2] **Baskaran, K.,** & Srinivasan, K. (2019). "Effects of upstream pipe length on pipe-cavity jet noise ". *Physics of Fluids*, *31*(10), 106103. (***Featured Article and Scilight***)

[J3] **Baskaran, K.,** & Srinivasan, K. (2019). "Aeroacoustic characteristics of subsonic flow from axisymmetric pipe-cavities". *Physics of Fluids*, *31*(10), 106107.

[J4] **Baskaran, K.,** & Srinivasan, K. (2021). "Aeroacoustic modal analysis of underexpanded pipe jets with and without an upstream cavity". *Physics of Fluids*, *33*(1), 016108.

Conference Publications

[C1] **Baskaran, K.,** & Dhamanekar, A. (2018, December). "Reduction of Impinging Noise Issued from Non-Circular Orifices". In *INTER-NOISE and NOISE-CON Congress and Conference Proceedings* (Vol. 258, No. 5, pp. 2140-2145). Institute of Noise Control Engineering.

[C2] Kamliya Jawahar, H., **Baskaran, K.,** & Azarpeyvand, M. (2021). "Unsteady Characteristics of Mode Oscillation for Screeching Jets". In *AIAA AVIATION 2021 FORUM* (p. 2279).

[C3] Jamaluddin, N. S., Celik, A., **Baskaran, K.,** Rezgui, D., & Azarpeyvand, M. (2021). "Aerodynamics and Aeroacoustics Characterisation of Isolated Rotor in Hover and Transition to Forward Flight". In *AIAA AVIATION 2021 FORUM* (p. 2311).

[C4] Celik, A., Jamaluddin, N. S., **Baskaran, K.,** Rezgui, D., & Azarpeyvand, M. (2021). "Aeroacoustic Performance of Rotors in Tandem Configuration". In *AIAA AVIATION 2021 FORUM* (p. 2282).

[C5] Jamaluddin, N. S., Celik, A., **Baskaran, K.,** Rezgui, D., & Azarpeyvand, M. (2021). "Aeroacoustic Performance of Propellers in Turbulent Flow". In *AIAA AVIATION 2021 FORUM* (p. 2188).

SEMINARS AND PRESENTATIONS

- **Baskaran, K.,** & Dhamanekar, A. (2018, December). "Reduction of Impinging Noise Issued from Non-Circular Orifices." In *INTER-NOISE and NOISE-CON Congress and Conference Proceedings* (Vol. 258, No. 5, pp. 2140-2145). Institute of Noise Control Engineering. [***Performed oral presentation***]

- Delivered lecture on **Jet Flow and Acoustics** as a part of lecture series on **Experiments in Jet Flows** in SRM institute of science and technology, Chennai, Jan, 2020.

- Kamliya Jawahar, H., **Baskaran, K.,** & Azarpeyvand, M. (2021). "Unsteady Characteristics of Mode Oscillation for Screeching Jets". [***Prepared presentation***]

AWARDS & GRANTS

- **Institute Research Award**, Kabilan Baskaran and Prof. K. Srinivasan "Aeroacoustic characteristics and noise control of pipe-cavity jets", PhD Thesis, 2021.

- Pump Priming, Kabilan Baskaran (PI), Mahdi Azarpeyvand (Co-I), "Unsteady characteristics of jet screech resonance using schlieren flow visualisation", (**Awarded 5000 £**).

PROJECTS

- **HORIZON 2020 - SilentProp**| *Experimental investigation on aerodynamics and aeroacoustics of isolated and distributed electric propeller and it noise control*.

- **Pump priming Project**| *Developing schlieren setup*.

- **Master and Doctoral Project**| *Aeroacoustic characteristics and noise control of pipe-cavity jets.*

- **Undergraduate Project**| *Numerical investigation of high-lifting devices*.

CONTRIBUTIONS TO THE SCIENTIFIC COMMUNITY

- Reviewer for **Physics of Fluids** and **International Journal of Aeroacoustics.**

- Delegate for "**JFM Symposia from Fundamentals to Applied Fluid Mechanics**" at IIT Madras, Dec 2017.

- Student volunteer in **INTER-NOISE** conference, held at CHICAGO, USA, Aug 2018.