

Rajesh Ranjan, Ph.D.

Associate Professor, IIT Kanpur

✉ rajeshr@iitk.ac.in

☎ +91 7795 06 7795

🌐 <https://home.iitk.ac.in/~rajeshr>

📄 <https://www.researchgate.net/profile/Rajesh-Ranjan-5>

🌐 <https://www.linkedin.com/in/rajeshranjanarya/>

Research Interests

◇ **Computational Fluid Dynamics • Scientific Machine Learning • Turbulence • High-Speed Aerodynamics • Turbomachinery • HPC**

Highlights

Publications	25+ journal papers, 40+ conference papers, 2 patents.
Citations	794 citations, h-index 13 (ResearchGate).
Software	Developed scalable, GPU-enabled CFD solvers (ANUROOP / PRAVAH / DHARA) and <i>underPINN</i> , a physics-informed neural network (PINN) framework.
Funding	~INR 10.4 crore secured across 11 sponsored projects as PI/Co-PI.
Teaching	3 new graduate courses developed; 4 NPTEL/MOOC offerings (~4800 learners).

Education

2010 – 2015	Ph.D. in Engineering Mechanics , JNCASR, Bengaluru, India. Advisors: <i>Prof. Roddam Narasimha and Prof. S. M. Deshpande</i> . Thesis title: <i>Compressible DNS Studies of the Boundary Layer on a Low-Pressure Turbine Blade at High Incidence</i> .
2005 – 2007	M.E. in Aerospace Engineering , IISc, Bengaluru, India. Advisor: <i>Prof. P. J. Paul</i> Thesis title: <i>Modeling & Simulation of a Lifted Turbulent Jet Diffusion Flame</i> .
2001 – 2005	B.E. in Chemical Engineering , Bihar Institute of Technology (BIT), Sindri, India.

Employment History

2025 – Present	Associate Professor , Dept. of Aerospace Engineering, IIT Kanpur, India.
2021 – 2025	Assistant Professor , Dept. of Aerospace Engineering, IIT Kanpur, India.
2017 – 2021	Postdoctoral Scholar , The Ohio State University (OSU), USA.
2015 – 2017	Research Associate , JNCASR, Bengaluru, India.
2007 – 2010	Member of Technical Staff , TATA Computational Research Laboratories, India.

Professional Recognition & Honors

Personal Honors & Awards

2026	Selected Scholar, Visiting Scholars Partnership Program (VSPP) , Florida State University. LOTUS Fellowship , Japan Science and Technology Agency (with <i>Prashant Kumar</i>).
2025	DPIIT Startup India Seed Fund Scheme (SISFS) Award for startup founded. ANRF ITS Travel Grant for attending ISSW35, Brisbane, Australia.

Professional Recognition & Honors (continued)

2021-24	Director's Commendation for Outstanding Teaching: AE602 (2024-25-I), AE661 (2022-23-II), AE664 (2021-22-I), IIT Kanpur.
2021	Invited speaker, Times of India group webinar "Third Wave: Prevention and Preparedness Matters" presided by then U.P. Health Minister Shri J P Singh.
2017	Co-Author, Best Paper Award (Maruthi N. H.), Computational Science Symposium, IISc, Bengaluru, India.
2015	Best Poster Award, JNCASR In-house Symposium, Bengaluru, India. Nominated for Dr. APJ Kalam HPC Award, CRAY Inc., India.
2014	DST International Travel Support Award, DST, Govt. of India.
2013	ICAM International Travel Award (Not availed), Institute for Complex Adaptive Matter. DST International Travel Support Award (Not availed), DST, Govt. of India.
2008-10	Outstanding Performance Award (2008,2009,2010), TATA Computational Research Labs
2005	All India Rank-3, Graduate Aptitude Test in Engineering(GATE), India. Gold Medal, B.E., Chemical Engineering, BIT, Sindri, India.
2001-05	Deshpande-Atkinson Award (2003,2004,2005), BIT, Sindri, India.

Student Awards (as Research Supervisor)

2026	Outstanding PhD Thesis, Harshit Tiwari, IIT Kanpur. Best Poster Award, Aditya Aanand, Symposium on AI-driven CFD, IIT Gandhinagar.
2025	Best Poster Award, Malavika Nair, CASML-2025, IISc Bengaluru.
2024	Hackathon Winner, Prashant Kumar, CASML-2024, IISc Bengaluru.
2022	Best Paper Award, Pranjal Anand, ICTACEM-2021, India.
2021	Best Paper of the Session Award, Geetam Saha, FMFP-2021, India.

Research Supervision

Summary	1 Ph.D. graduated with <i>Outstanding Thesis Award</i> · 4 Ph.D. (ongoing) · 17 M.Tech. graduated, 6 ongoing · 1 MSR, 1 BT-MT graduated, · 18 B.Tech. projects · 1 postdoc.
Postdocs	Pawan Kumar (Mar 2025 – Aug 2025)
PhD Students	Harshit Tiwari (Graduated), Prashant Kumar (Since 2022, LOTUS Fellow), Digpriya (Since 2022), Smrutiranjana Nayak (Since 2023), Yesuf Hussien Yimer (Since 2026)
M.Tech. Students	Lovesh Kumar, Sunil G, Aditya Aanand, Mohan K., Nagendra Kumar
M.Tech. Students (Graduated)	Sevitha V., Yash Phirke, Pavan K Pasupuleti, Abhishek Tiwari, Vishw Patel, Prakash Raj, Raghav Gupta, Yash Bajpai, K. Srichaitanya, Suchintika Chanda, Bhavin Patel, Kavan Prabhani, Kshitij Sharma, Anil Kumar Jat
MSR Students (Graduated)	Jaimini Chauhan
BT-MT Students (Graduated)	Abhinav Aggrawal

Research Supervision (continued)

B.Tech. Students (Projects) Anuj Kumar Gupta, S. Ashwin, Aakarsh Mishra, Mayankit, Misbahur Rahman, Harshit Bhushan, Himanshu Mittal, Om Kothawade, Nandan Madhuj, Shubham Kumar, Siddesh Bharat Hazare, Arihant Jha, Tanya Arya, Som V. Tambe, Atharva Umbarkar, Adarsh Baderia, Anwesh Kumar Yadav, Ashwani

Sponsored Research & Funding

Period	Agency	Title of Project	Amt. (INR, lakhs)	Role	Status
2026-29	DST-NQM	Quantum Machine Learning for Reservoir Computing and PDE Solvers	82	PI	Ongoing
2026-29	DST-ANRF	Physics-Informed Machine Learning for Enhanced Turbine Blade Flow Predictions: Bridging Experiments and Computations	98	PI	Ongoing
2026-29	DST-ANRF	Flow Control for Next-Generation Aircraft Using Boundary Layer Ingestion Engines	206	Co-PI	Ongoing
2024-26	CMPDIL	Design And Development Of A Model Cargo-Hyperloop Using Pipe Following Robot	219.63	Co-PI	Ongoing
2024-26	KSS-IITK	Forecasting Weather and Climate using Dynamics and Artificial Intelligence	34.2	Co-PI	Ongoing
2024-27	DMRL	Cyclic Thermal Testing of TBC Coated Super-alloys in a Burner Rig	345	Co-PI	Ongoing
2024-26	ISRO	Development of a GPU-enabled LES Solver for Unsteady Hypersonic Flows Using Curvilinear Grids	26.4	PI	Ongoing
2023–	MoE	PMRF Sub Project	~30	PI	Ongoing
2022-24	DST-SERB	Computational Investigation of Flow over Low-drag Turboprop Wings in Tractor Configuration	25.8	PI	Completed
2022-24	IIT Kanpur	Special Research Grant	5	PI	Completed
2022-24	IIT Kanpur	Numerical Characterization of Transitioning Boundary Layers in Turbomachines	25	PI	Completed
Total sanctioned (~INR 11.1 crore)			~1100		

Teaching

Courses Developed

- 2025 **Math & Computation Using Python (IDC612)**. First offered in Fall 2025.
- 2023 **Scientific Machine Learning in Fluid Mechanics (AE646)**. First offered in Fall 2023.
- 2022 **Applied Computational Fluid Dynamics (AE661A)**. First offered in Spring 2023.

Teaching (continued)

Courses Taught at IIT Kanpur

Fall 2026	Applied Compressible Flows (AE664)
Summer 2026	Applied Compressible Flows (AE664)
Fall 2025	Scientific Machine Learning in Fluid Mechanics (AE646)
Spring 2025	Engineering Graphics (TA111) , Institute Compulsory Course (600 students)
Fall 2024	Mathematics for Aerospace Engineering (AE602) , PG Compulsory [Outstanding Teaching Award]
Spring 2024	Applied Computational Fluid Dynamics (AE661)
Fall 2023	Scientific Machine Learning in Fluid Mechanics (AE646A) Experiments in Aerospace Engg. (AE451A) , UG Compulsory
Summer 2023	Rocket Propulsion (AE441A)
Spring 2023	Applied Computational Fluid Dynamics (AE661A) [Outstanding Teaching Award]
Fall 2022	Introduction to Aerospace Engg. (AE201A) , UG Compulsory Experiments in Aerospace Engg. (AE451A) , UG Compulsory
Spring 2022	Airbreathing Propulsion (AE341A) , UG Compulsory
Fall 2021	Applied Compressible Flows (AE664A) , PG Compulsory [Outstanding Teaching Award]

MOOC/NPTEL Courses Taught

2026	Applied Computational Fluid Dynamics . Learners enrolled: ~ 1100. Computational Gas Dynamics . Learners enrolled: ~ 800.
2025	Applied Computational Fluid Dynamics . Learners enrolled: ~ 1100.
2024	Applied Computational Fluid Dynamics . Learners enrolled: ~ 1850.

Invited Short Courses & Workshops

2026	Guest Lecturer , 11th National Workshop on Data Driven Modeling by FMFP, NIT Rourkela 31 Aug- 3 Sep. 2026 Guest Lecturer , Workshop on DEFENCE & AEROSPACE TECHNOLOGY 2026, SIIC IIT Kanpur, 29 July 2026 Guest Lecturer , BFI MedTech Workshop 2026, IIT Kanpur, 30 July 2026 Invited Talk , Data-driven Modelling for Mechanical Systems Summer School (D2MMS) 2026, IIT-ISM Dhanbad, 1-5 July 2026 Guest Lecturer , SPARC-workshop on Turbulence Modeling, IIT Madras, 4-6 Jan 2026
2025	Invited Speaker , Second Indo-Japanese Collaborative Workshop on CFD-based AI and HPC, IIT Kanpur, 21-22 Dec. 2025 Invited Speaker , National Workshop on AI & ML Methods in Advanced Computing (AIMLAC-2025), MNNIT Allahabad, 3-7 Nov. 2025 Resource Person , Refresher Course on "Fluid Mechanics in Action: Principles, Advances, and Applications Refresher", under the Malaviya Mission Teacher Training Programme (MMTTP), IIT-ISM Dhanbad, Sep 15-26, 2025
2023	Guest Lecturer , NSM HPC Research Week, IIT Madras, Nov. 20-25, 2023. Guest Lecturer , National Supercomputing Mission Workshop for Training in Computational Fluid Dynamics, IIT Hyderabad, June 19-24, 2023

Teaching (continued)

2021	Resource Person , ATAL Academy Online Elementary FDP, 'Cutting-edge multidisciplinary research in the field of fluids', NIT Rourkela, 11-15 Oct. 2021.
2020	Resource Person , International Faculty Development Programme on Mathematical Modelling, KCT, India, 2020

Activities

Professional Service & Leadership

Editor	Emerging Trends in Fluid Mechanics and Fluid-Structure Interactions: Select Proceedings of INCAM 2026 by Springer Nature.
Guest Editor	Special Issue in ' Computers & Fluids ' multidisciplinary international journal published by Elsevier (2024-25). Special Issue in ' Sadhana ' published by the Indian Academy of Sciences, Special Issue on CFD (2024-25).
Member, Executive Committee	Asian Computational Fluid Dynamics (ACFD), 2022–Present
Secretary	Indian National Conference on Applied Mechanics (INCAM) 2026, India
Subtrack Co-Chair	Gas Turbine, ASME International Mechanical Engineering Congress & Exposition (IMECE) India, 2026.
Chair	Student Seminar Series, ASME-GT India, 2025–Present.
Member, Organizing Committee	Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD) 2026, India.
Organizing Secretary	Asian CFD Conference-2023, India Symposium for Promotion of Indigenous CFD for Engineering Sciences (SPICES)-2022, India.
Member, Organizing Committee	Asian Congress on Gas Turbines (ACGT) 2024, India.
Member, Evaluation Committee	Startup Incubation and Innovation Centre (SIIC), IIT Kanpur, 2022-24.
Key Organizer	Indo-Japanese Collaborative Workshop on CFD-based AI and HPC-2025, India. Indo-Japanese Collaborative Workshop on CFD-based AI and HPC-2024, India. Special Session: Asian CFD Conference-2022, India. Research Scholars Day-2022, IIT Kanpur, India.
Faculty Coordinator	Society of Aerospace Engineers (SAE), IIT Kanpur, 2023-24
Fellowship/Membership	<i>Member</i> , AIAA, ASME, APS, EUROMECH. <i>Member</i> , Aeronautical Society of India.
Reviewer	Journal of Fluid Mechanics, Journal of Computational Physics, Computers & Fluids, AIAA Journal, Journal of Propulsion & Power, Aerospace Science & Technology, ASME Gas turbine-Expo, Engineering Applications of Computational Fluid Mechanics, Applied Mathematical Modelling, Transactions of INAE, <i>Sadhana</i> , Current Science, Propulsion and Power Research, Frontiers in Public Health.
IIT/K Representative	JEE and GATE exams
External PhD Thesis Examiner	IIT Madras

Activities (continued)

Session Chair	AIAA Aviation (2018, Atlanta), ICCFD-12 (2024, Japan), ACFD-2022 (Korea), ISSW-35 (2025, Brisbane)
Poster Judge	Statewide Users Group Conference, 2018, Ohio Supercomputer Center.
Academic Expert	Mathematics Department Advisory Board, KCT, Coimbatore

Administrative Activities

Committee Member	Department Undergraduate Committee (DUGC), AE, IIT/K, 2024-
Convener	Department Student Affairs Committee (DSAC), AE, IIT/K, 2022-2023
Committee Member	Department Postgraduate Committee (DPGC), AE, IIT/K, 2022-2024 Institute Student Advisory Committee (ISAC), IIT Kanpur, 2021 Institute SURGE Evaluation Committee, IIT Kanpur, 2022-23 Department Web Designing Committee, AE, IIT Kanpur, 2021-
Coordinator	Computer, Aerospace Engg., IIT/K, 2021-2022 SURGE, Aerospace Engg., IIT/K, 2021-2023
External Member	PG Admission Committee, ME, IIT/K, 2021-22 PG Admission Committee, ChE, IIT/K, 2021-23

Invited Speaker/Talks

2026	Physics-Informed Neural Networks for Predicting Complex Multiscale Fluid Flows , International Symposium on AI-driven CFD, IIT Gandhinagar, 10–14 Jan 2026
2025	Data-free PINNs for Shock-Dominated Flows and SWBLIs , Indo-Japanese Workshop on CFD-based AI and HPC, IIT Kanpur, 22–23 Dec. 2025 Human vs Artificial Intelligence: Career in the Era of AI/ML , Career Development Centre, BIT Sindri, 5 Dec. 2025 CFD for Engineering Design: Theory, Practice, and Emerging Trends , Chemical Engg. Dept., BIT Sindri, 5 Dec. 2025 Computational Fluid Dynamics (CFD) in the Design of Military Cargo Aircraft , Chief Guest, Engineers' Day, HAL Kanpur, Sep. 15, 2025 AI/ML in everyday life , CSJMU 60 th Foundation Day, Kanpur University, 9 Feb 2025
2024	A GPU-enabled 3D LES Solver for Low Subsonic to Hypersonic Flow Computations , Computations of High-Speed, Turbulent, and Complex Flows (CHTC), IIT Hyderabad.
2025	HPC in the Design of Transport Vehicles: Turboprops, Bullet Trains, and Hyperloops , HPC Symposium, Apr. 25, 2025.
2023	Tomorrow's Revolution: How Machine Learning Can Aid CFD Analysis and Design? , Quimica, BIT Sindri, Nov. 26, 2023. Exploiting Modern Computing Architectures and Machine Learning Tools to Accelerate Fluid Flow Simulations , AeSI CFD Silver Jubilee Convention, Bengaluru, Aug. 11, 2023.
2022	Necessity and feasibility of DNS studies for complex turbomachinery flows , Special Session-Recent trends in High-fidelity Fluid Dynamics Computations, 22 Asian CFD Conference, Jeju, Korea, Oct. 16-19, 2022.
2021	Meandering of streamwise vortices behind military transport aircraft fuselage , IISc Bengaluru, Dec. 28, 2021. Predicting COVID-19 course in India: Modeling approaches & challenges , IIT Goa, July 24, 2021.

Invited Speaker/Talks (continued)

- Covid-19 and Data Science**, NIT Warangal, Jan. 20, 2021.
- Mathematical Modelling of COVID-19: Uncertainties and Hope**, BIT Sindri, July 4, 2021.
- Mathematical Model of COVID-19**, K J Somaiya, Mumbai, Oct. 29, 2021.
- Experience from the Past Pandemic & Forecasting for the Future**, FICCI, Aug 17, 2021.
- COVID-19 Epidemic Modeling using Monte-Carlo simulations**, Netherland's Consulate, Aug 16, 2021.
- COVID-19: Learnings from the Past to prepare for the Future**, Times of India Webinar, Aug 3, 2021.
- 2020 **COVID-19 in India: Dynamics, Modeling & Predictions**, International Workshop on Epidemic Modeling (IWEM2020), NMIMS, Mumbai.
- 2018 **New avenues for stability and sensitivity analyses of realistic flows**, Trust for Advancement of Aerodynamics in India (TAAI).
- Stability dynamics of three-dimensional cavity flows using an optimally parallel analysis tool**, Ohio Supercomputer Center SUG Flash Talk, Columbus, US
- 2015 **Cumulus Clouds and Turbine Blades: Fluid Dynamics Problems that demand Peta to Near-exa Computing**, Scientific Applications on PARAM Yuva II, C-DAC, Pune, India
- Two Challenging problems in CFD: Gas Turbine Blades and Cloud Flows**, Mission Aerospace Foundation of India, Bengaluru, India.

Research Impact & Media Highlights

- 2021 Assisted StepOne COVID-19 volunteer team for the management of COVID-19 through characterization and projection
- 2022 Developed website for COVID-19 predictions in India (retrieved on January 7, 2022), covid19-forecast.org/
- Interview in Times of India on COVID-19 third wave in India (dated: January 15, 2022), [Link](#)
- 2021 COVID-19 cited in several international news outlets, [Washington Post](#), [WebMD](#), [Medical News](#)
- Interview in ABP News on COVID-19 second wave in India (26 May 2021) [Link](#)
- Reference to our COVID-19 report by WHO, [COVID-19 weekly epidemiological update, 11 May 2021](#)
- Interview in Times of India on COVID-19 second wave in India (dated: June 23, 2021), [Link](#)
- 2021-22 COVID-19 cited in several national news outlets, [Business Line](#), [Navbharat Times](#), [Dainik Bhaskar](#), [Patrika](#)

Publications

ResearchGate Citations: 814, h-index- 14

Patents & Copyrights

- 1 **Ranjan, R.**, Narasimha, R., & Deshpande, S. M. (n.d.). *Anuroop: A compressible DNS code to simulate and study flow over turbine blades*. Govt. of India. Copyright with Reg. No. SW-9306/2017 (Aug. 2017).
- 2 Samal, B., Mishra, S., K, A., Kumar, R., K, A., Jacob, J., ... Nath, N. (n.d.). *Compressed air propelled cargo hyperloop system with rail-wheel configuration and compliant suspension*. Patent filed on January 06, 2026 (under review).

Journal Articles

Last updated: September 11, 2026

Page 7 of 14

- 1 Avdieiev, A., Jayakumar, R., Mouvanal, S. K., & **Ranjan, R.** (2026). Wall temperature effects on hypersonic double-ramp flow dynamics. *AIAA Journal*. doi:<https://doi.org/10.2514/1.J066645>
- 2 Kumar, P., & **Ranjan, R.** (2026a). A robust data-free physics-informed neural network for compressible flows with shocks. *Computers & Fluids*, 308, 106975. doi:<https://doi.org/10.1016/j.compfluid.2026.106975>
- 3 Aggarwal, A., & **Ranjan, R.** (2025a). Role of curvature in controlling swbli behavior in a hypersonic double ramp flow. *Frontiers in Mechanical Engineering*, 11. doi:[10.3389/fmech.2025.1550464](https://doi.org/10.3389/fmech.2025.1550464)
- 4 Pasupuleti, P. K., Srichaitanya, K., & **Ranjan, R.** (2025a). Influence of blade, hub, and nacelle modeling on propeller–wing interactions in turboprop simulations. *European Physical Journal - Special Topics (EPJ-ST)*. doi:<https://doi.org/10.1140/epjs/s11734-025-01813-7>
- 5 Pasupuleti, P. K., Srichaitanya, K., & **Ranjan, R.** (2025b). Comparative evaluation of propeller modeling approaches for efficient simulations of wing–propeller interaction. *Journal of Aerospace Sciences and Technologies*, 312–324.
- 6 **Ranjan, R.**, Venkatesh, T. N., & Mathew, J. (2025). Editorial: Special issue on “new directions in computational fluid dynamics”. *Computers & Fluids*, 106701. doi:<https://doi.org/10.1016/j.compfluid.2025.106701>
- 7 **Ranjan, R.**, Robinet, J., & Gaitonde, D. (2024). Characterization and low-order representation of the vortex meandering motion in upswept afterbody wakes. *European Journal of Mechanics-B/Fluids*, 106, 166–180. doi:doi.org/10.1016/j.euromechflu.2024.04.010
- 8 Sharma, K., & **Ranjan, R.** (2024). Numerical prediction of largely separated flows in low-pressure turbine blades with high loading. *Sadhana*, 49, 61. doi:doi.org/10.1007/s12046-023-02376-w
- 9 Prabhani, K. M., & **Ranjan, R.** (2023b). Turbulence modeling for SWTBLI with expansion wave interference inside scramjet inlets. *International Journal of Computational Fluid Dynamics*, 37(3), 201–217. doi:[10.1080/10618562.2023.2195642](https://doi.org/10.1080/10618562.2023.2195642)
- 10 Doshi, P. S., **Ranjan, R.**, & Gaitonde, D. V. (2022). Global and local modal characteristics of supersonic open cavity flows. *Physics of Fluids*, 34(3), 034104. Editor’s pick. doi:[10.1063/5.0082808](https://doi.org/10.1063/5.0082808)
- 11 Liu, Q., Gaitonde, D. V., & **Ranjan, R.** (2022). Global stability analysis of flow behind an upswept aftbody. *AIAA Journal*, 60(2), 1257–1261. doi:[10.2514/1.J061091](https://doi.org/10.2514/1.J061091)
- 12 **Ranjan, R.**, Robinet, J.-C., & Gaitonde, D. (2022). Instability mechanisms in meandering streamwise vortex pairs of upswept afterbody wakes. *European Journal of Mechanics-B/Fluids*, 96, 90–104. doi:[10.1016/j.euromechflu.2022.07.006](https://doi.org/10.1016/j.euromechflu.2022.07.006)
- 13 Joshi, R., Shrivastav, A., Manek, V., Tiwari, P., Dixit, A., kumar Mishra, S., ... **Ranjan, R.** et al. (2021). Advancement of research on yagya-national symposium consensus. *Interdisciplinary Journal of Yagya Research*, 4(2), 28–39.
- 14 **Ranjan, R.**, Sharma, A., & Verma, M. K. (2021). Characterization of the second wave of COVID-19 in india. *Current Science*, 121(1), 85–93. doi:[10.18520/cs/v121/i1/85-93](https://doi.org/10.18520/cs/v121/i1/85-93)
- 15 **Ranjan, R.**, Unnikrishnan, S., Robinet, J.-C., & Gaitonde, D. (2021). Global transition dynamics of flow in a lid-driven cubical cavity. *Theoretical and Computational Fluid Dynamics*, 35(3), 397–418. doi:[10.1007/s00162-021-00565-z](https://doi.org/10.1007/s00162-021-00565-z)
- 16 **Ranjan, R.** (2020a). COVID-19 spread in india: Dynamics, modeling, and future projections. *Journal of Indian Statistical Association*, 58(2), 47–65. Retrieved from <https://tinyurl.com/jisa2020>
- 17 **Ranjan, R.** (2020c). Temporal dynamics of COVID-19 outbreak and future projections: A data-driven approach. *Transactions of the Indian National Academy of Engineering*, 5(2), 109–115. doi:[10.1007/s41403-020-00112-y](https://doi.org/10.1007/s41403-020-00112-y)

- 18 **Ranjan, R.**, Aultman, M., & Gaitonde, D. (2020). Mean flowfield evolution with upsweep angle in a simulated cargo fuselage aftbody. *Journal of Aircraft*, 57(6), 1156–1169. [doi:10.2514/1.C035860](https://doi.org/10.2514/1.C035860)
- 19 **Ranjan, R.**, & Gaitonde, D. (2020a). Hysteresis in slanted-base-cylinder afterbody flows. *Aerospace Science and Technology*, 106, 106138. [doi:10.1016/j.ast.2020.106138](https://doi.org/10.1016/j.ast.2020.106138)
- 20 **Ranjan, R.**, Unnikrishnan, S., & Gaitonde, D. (2020). A robust approach for stability analysis of complex flows using high-order Navier-Stokes solvers. *Journal of Computational Physics*, 403, 109076. [doi:10.1016/j.jcp.2019.109076](https://doi.org/10.1016/j.jcp.2019.109076)
- 21 Riley, L. P., **Ranjan, R.**, & Gaitonde, D. V. (2020). Spectral content in a supersonic backward-facing step flow. *Journal of Spacecraft and Rockets*, 58(1), 210–221. [doi:10.2514/1.A34890](https://doi.org/10.2514/1.A34890)
- 22 Patel, K. S., Maruthi, N., **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2019). A critical comparison of DNS versus model results on an HPT blade for a small engine. *Journal of Aerospace Sciences and Technologies*, 71, 219–224. Retrieved from [doi:10.61653/joast.v71i2.2019.140](https://doi.org/10.61653/joast.v71i2.2019.140)
- 23 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2017). New insights from high-resolution compressible DNS studies on an LPT blade boundary layer. *Computers & Fluids*, 153, 49–60. [doi:10.1016/j.compfluid.2017.05.004](https://doi.org/10.1016/j.compfluid.2017.05.004)
- 24 **Ranjan, R.**, & Narasimha, R. (2017). An assessment of the two-layer quasi-laminar theory of relaminarization through recent high-re accelerated turbulent boundary layer experiments. *Journal of Fluids Engineering*, 139(11). [doi:10.1115/1.4037059](https://doi.org/10.1115/1.4037059)
- 25 Khare, A., Baig, R., **Ranjan, R.**, Shah, S., Pavithran, S., Nikam, K., & Moitra, A. (2009b). Computational simulation of flow over a high lift trapezoidal wing. *International Journal of Aerospace Innovations*, 1(4). [doi:10.1260/175722509790291572](https://doi.org/10.1260/175722509790291572)

Manuscripts Under Review / arXiv

- 1 Kumar, P., & **Ranjan, R.** (2026c). *Multiscale physics-informed neural network for complex fluid flows with long-range dependencies*. Under review.
- 2 Chauhan, J., & **Ranjan, R.** (2025). *Effect of throttling on internal shock structure and performance of scramjet intakes*. Under submission to Physics of Fluids.
- 3 Nidharia, M., Phirke, Y., & **Ranjan, R.** (2025). *Wake flow characteristics of high-speed trains: Influence of tail geometry and ground clearance*. Under submission to European Journal of Mechanics, B/Fluids.
- 4 Tiwari, H., Singh, D., Verma, M. K., & **Ranjan, R.** (2025). *Energy spectra and fluxes in forced supersonic turbulence using high-order direct numerical simulations*. Under review (PRE).
- 5 Patel, K. S., Maruthi, N., Deshpande, S., **Ranjan, R.**, & Narasimha, R. (2024). *Investigation of transition mechanisms in high-pressure turbine blades using direct numerical simulations*. Under review, Computers & Fluids.
- 6 **Ranjan, R.** (2022). *Omicron impact in india: Analysis of the ongoing COVID-19 third wave based on global data*. Published on medRxiv, 32 citations. [doi:10.1101/2022.01.09.22268969](https://doi.org/10.1101/2022.01.09.22268969)
- 7 **Ranjan, R.** (2020b). *Predictions for COVID-19 outbreak in india using epidemiological models*. Published on medRxiv, 122 citations. [doi:10.1101/2020.04.02.20051466](https://doi.org/10.1101/2020.04.02.20051466)
- 8 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2020). *Prediction of separation and transition on a low-pressure turbine blade using a rans grid*. Published on arXiv, arXiv:2004.10967. Retrieved from <https://arxiv.org/abs/2004.10967>

Peer-reviewed Conference Proceedings (Scopus-indexed)

- 1 Chanda, S., Kumawat, S., Tiwari, A., **Ranjan, R.**, & Tripathi, A. (2025). Continuum simulation of granular flow in a rotating cylinder. In *Epj web of conferences* (Vol. 340, p. 09004).
 doi:<https://doi.org/10.1051/epjconf/202534009004>
- 2 Kumar, P., & **Ranjan, R.** (2025a). Evaluation of physics-informed machine learning approach for computation of fluid flows. In *Lecture notes in mechanical engineering: Proceedings of the 10th international and 50th national conference on fluid mechanics and fluid power (FMFP)* (pp. 429–440).
 doi:[10.1007/978-981-97-6783-0_33](https://doi.org/10.1007/978-981-97-6783-0_33)
- 3 Prabtani, K., & **Ranjan, R.** (2025). Relaminarization effects on swtqli due to upstream expansion. In *Proceedings of the 15th international symposium on experimental and computational aerothermodynamics of internal flows* (pp. 1–13).  doi:[10.1007/978-981-96-4082-9_23](https://doi.org/10.1007/978-981-96-4082-9_23)
- 4 Patel, B., & **Ranjan, R.** (2024). Flow features of propeller wakes impinging on a circular disk through unsteady simulations. In S. S. Krishna Mohan Singh Sushanta Dutta & N. K. Singh (Eds.), *Fluid mechanics and fluid power (vol. 1). FMFP 2024. lecture notes in mechanical engineering* (pp. 769–781).
 doi:https://doi.org/10.1007/978-981-99-7827-4_60
- 5 Phirke, Y., & **Ranjan, R.** (2024). Strategies for efficient gpu acceleration of a high-order 3d les solver using openacc. In *2024 ieee 31st international conference on high performance computing, data and analytics workshop (hipcw)* (pp. 169–170).  doi:[10.1109/HiPCW63042.2024.00062](https://doi.org/10.1109/HiPCW63042.2024.00062)
- 6 Nitya, M., & **Ranjan, R.** (2023). Numerical investigation of transitional flows over naca 0012. In S. Bhattacharyya, S. Verma, & A. R. Harikrishnan (Eds.), *Fluid mechanics and fluid power (vol. 3). FMFP 2021. lecture notes in mechanical engineering* (pp. 381–385).
 doi:https://link.springer.com/chapter/10.1007/978-981-19-6270-7_64
- 7 Saha, G., & **Ranjan, R.** (2023). Transition modelling for flow separation in low-pressure turbine cascades. In *Fluid mechanics and fluid power (vol. 1). FMFP 2021. lecture notes in mechanical engineering* (p. 319). Best Paper in the Session Award.  doi:[10.1007/978-981-19-7055-9_54](https://doi.org/10.1007/978-981-19-7055-9_54)
- 8 Anand, P., & **Ranjan, R.** (2022). Aerothermal predictions of high-pressure turbine flows using rans methods. In *Aerospace and associated technology (proceedings of ictacem 2021)* (Chap. 92, pp. 1–6). Best Paper Award.  doi:[10.1201/9781003324539-92](https://doi.org/10.1201/9781003324539-92)
- 9 Rajparaand, S., & **Ranjan, R.** (2022). Rans modelling for short and long separation bubbles in flow past low-pressure turbine cascades. In *Aerospace and associated technology (proceedings of ictacem 2021)* (Chap. 98, pp. 1–6).  doi:[10.1201/9781003324539-98](https://doi.org/10.1201/9781003324539-98)
- 10 Doshi, P. S., **Ranjan, R.**, Liu, Q., Gist, E. D., Gaitonde, D. V., & Glauser, M. N. (2021). Toward a passive control strategy for a supersonic multi-stream flow using resolvent analysis. In *AIAA scitech 2021 forum* (p. 1557).  doi:[10.2514/6.2021-1557](https://doi.org/10.2514/6.2021-1557)
- 11 **Ranjan, R.**, Garmann, D. J., & Gaitonde, D. (2021). Compressibility effects on flow behind a simulated transport aircraft fuselage. In *AIAA aviation 2021 forum* (p. 2560).  doi:[10.2514/6.2021-2560](https://doi.org/10.2514/6.2021-2560)
- 12 Aultman, M., **Ranjan, R.**, & Gaitonde, D. V. (2020). Effect of upsweep angle on the mean flow of a simulated cargo fuselage. In *AIAA scitech 2020 forum*.  doi:[10.2514/6.2020-1323](https://doi.org/10.2514/6.2020-1323)
- 13 **Ranjan, R.**, Robinet, J.-C., & Gaitonde, D. V. (2020). Meandering of longitudinal wake vortices in slanted base afterbody flows. In *AIAA scitech 2020 forum*.  doi:[10.2514/6.2020-1532](https://doi.org/10.2514/6.2020-1532)
- 14 Doshi, P., **Ranjan, R.**, & Gaitonde, D. V. (2019). 2d and 3d stability of cavity flows in high Mach number regimes. In *Asme-imece 2019*.  doi:[10.1115/IMECE2019-10828](https://doi.org/10.1115/IMECE2019-10828)
- 15 Riley, L. P., **Ranjan, R.**, & Gaitonde, D. V. (2019a). Unsteadiness in a supersonic backward-facing step flow. In *AIAA aviation 2019 forum* (p. 3343).  doi:[10.2514/6.2019-3343](https://doi.org/10.2514/6.2019-3343)
- 16 Riley, L. P., **Ranjan, R.**, & Gaitonde, D. V. (2019b). Unsteady scaLES of a supersonic backward-facing step flow via perturbation analysis. In *AIAA scitech 2019 forum* (p. 1910).  doi:[10.2514/6.2019-1910](https://doi.org/10.2514/6.2019-1910)

- 17 **Ranjan, R.**, Unnikrishnan, S., & Gaitonde, D. V. (2018). On the use of mean flow perturbation for global stability analysis. In *AIAA aviation 2018 forum*. doi:10.2514/6.2018-3378
- 18 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2016b). A high-resolution compressible DNS study of flow past a low-pressure gas turbine blade. In *Advances in computation, modeling and control of transitional and turbulent flows* (pp. 291–301). doi:10.1142/9789814635165_0028
- 19 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2014a). Direct numerical simulation of compressible flow past a low pressure turbine blade at high incidence. In *Proceedings of asme 2014 4th joint us-european fedsm*. doi:10.1115/FEDSM2014-21773
- 20 Moitra, A., **Ranjan, R.**, Khare, A., Shah, S., & Nikam, K. (2011). Viscous flow analysis of a twin-engine commercial transport aircraft in high lift landing configuration. In *29th AIAA applied aerodynamics conference* (p. 3011). doi:10.2514/6.2011-3011

Conference Proceedings

- 1 Kumar, P., & **Ranjan, R.** (2027). Gpu-accelerated large-eddy simulation of the spleen low-pressure turbine cascade. In *Proceedings of the national aerospace propulsion conference 2027 (napc 2027)*. To appear.
- 2 Lovesh Dua, V. C., & **Ranjan, R.** (2027). Influence of spatial and temporal integral scales on inflow realization in les of supersonic compression ramps. In *Proceedings of the national aerospace propulsion conference 2027 (napc 2027)*. To appear.
- 3 Nayak, S., Akolekar, H. D., & **Ranjan, R.** (2026a). Enhancing wake prediction in low-pressure turbine flows using machine learning and high-fidelity simulations. In *Proceedings of the 27th international society for air breathing engines (isabe 2026)*. To appear, Mumbai, India.
- 4 Nayak, S., Akolekar, H. D., & **Ranjan, R.** (2026b). Resolving unsteady wake dynamics in a transonic low-pressure turbine via hybrid scale-resolving simulations. In *Proceedings of the asme 2026 international mechanical engineering congress and exposition (IMECE-INDIA2026)*, Chennai, India.
- 5 Subrahmanyam, P., & **Ranjan, R.** (2026). Evaluation of roe, hll, hllc and llf flux solvers with weno5, weno-z5 and teno5 reconstruction schemes for compressible flow simulations. In *Proceedings of the 27th annual aesi cfd symposium*, Department of Aerospace Engineering, Indian Institute of Technology Madras, Chennai, India.
- 6 Upadrashta, S. S., Kumar, P., & **Ranjan, R.** (2026). Physics-informed reconstruction of turbulent backward-facing step flow using underpinn. In *Proceedings of the 27th annual aesi cfd symposium*, Department of Aerospace Engineering, Indian Institute of Technology Madras, Chennai, India.
- 7 Anand, A., & **Ranjan, R.** (2026). Data-free physics-informed deep operator network for generalized low-reynolds-number aerodynamic flow prediction. In *7th indian conference on applied mechanics (incam), 2026*.
- 8 Digpriya, **Ranjan, R.**, & Moise, P. (2026). Unsteady oscillations of separated shear flows on a flat plate with adverse pressure gradient. In *7th indian conference on applied mechanics (incam), 2026*.
- 9 G, S., & **Ranjan, R.** (2026). A cost-effective simulation framework for the aerodynamic design and development of uavs. In *7th indian conference on applied mechanics (incam), 2026*.
- 10 Kumar, A., Ansari, U., & **Ranjan, R.** (2026). Numerical simulation and analysis of flow separation in overexpanded nozzles at high nprs. In *Fluid mechanics and fluid power. FMFP 2026*.
- 11 Kumar, P., Nayak, S., & **Ranjan, R.** (2026). Turbo-PINN: A Mesh-Free Machine Learning Framework for Low-Reynolds-Number Turbine Blade Flow Prediction. In *Proceedings of the asme 2026 international mechanical engineering congress and exposition (IMECE-INDIA2026)*.
- 12 Kumar, P., & **Ranjan, R.** (2026b). Hemodynamic modeling of aortic and intracranial aneurysms using data-free physics-informed neural networks. In *9th international conference on computational & mathematical biomedical engineering (CMBE2026)*.

- 13 Aggarwal, A., & **Ranjan, R.** (2025b). Shock-boundary layer interactions in double ramp flow in the presence of curvature. In *35th international symposium on shock waves (ISSW) 2025*. DST Travel Award.
- 14 Avdieiev, A., Jayakumar, R., Mouvanal, S. K., & **Ranjan, R.** (2025). Effect of wall temperature on hypersonic double ramp flow dynamics. In *Division of fluid dynamics annual meeting 2025*. APS.
- 15 Kumar, P., Tongaria, M., & **Ranjan, R.** (2025b). Predicting turbomachinery flows with physics-informed neural networks and sparse data assimilation. In *26th aesi CFD symposium-2025*.
- 16 Menon, T., & **Ranjan, R.** (2025). Wake-blade interaction on a high-speed transonic LPT cascade. In *International conference on sustainable aerospace technologies and innovations (icsati-2025)*. Proceedings in publication.
- 17 Bajpai, Y., & **Ranjan, R.** (2024). Large-eddy simulations and reduced-order modeling for naca4412 flow near the stall angle. In *Proceedings of 12th international conference on computational fluid dynamics (ICCFD12)*.
- 18 Chauhan, J., & **Ranjan, R.** (2024). Passive flow control in realistic scramjets. In *Proceedings of 10th symposium on applied aerodynamics and design of aerospace vehicles (SAROD-2024)*.
- 19 Gupta, R., Jain, A., & **Ranjan, R.** (2024). Numerical prediction and separation control of flows in a low-pressure turbine cascade at transonic conditions. In *Asian conference on gas turbines (acgt) 2024, IIT Kanpur*.
- 20 Kumar, P., & **Ranjan, R.** (2024). Flow predictions behind naca 2412 aerofoil using physics-informed machine learning. In *Proceedings of 12th international conference on computational fluid dynamics (ICCFD12)*.
- 21 Nidharia, M., Phirke, Y., & **Ranjan, R.** (2024). A gpu-enabled curvilinear LES solver for high-speed flows. In *Proceedings of 10th symposium on applied aerodynamics and design of aerospace vehicles (SAROD-2024)*.
- 22 Nidharia, M., & **Ranjan, R.** (2024). Effect of mach number on the stability of backward facing step flows. In *Proceedings of 8th national symposium on shock waves (nssw 2024), IIT kanpur*.
- 23 Patel, V., Jain, A., & **Ranjan, R.** (2024). Accelerating supersonic flow simulations: Cuda optimization of the 'PRAVAH' LES solver. In *Proceedings of 8th national symposium on shock waves (nssw 2024), IIT Kanpur*.
- 24 Raj, P., Sethi, V., & **Ranjan, R.** (2024). Predictions of heat-transfer on high-pressure turbine blades at varying turbulent intensities. In *Asian conference on gas turbines (acgt) 2024, IIT Kanpur*.
- 25 Srichaitanya, K., Pasupuleti, P. K., & **Ranjan, R.** (2024). Simulations of propeller-wing interactions in a typical turboprop aircraft using virtual blade modeling. In *Proceedings of annual aesi CFD symposium 2024, bit mesra*.
- 26 Aggarwal, A., & **Ranjan, R.** (2023). Spatio-temporal evolution of SWBLI in hypersonic double ramp flow using high-order LES. In *Proceedings of 9th Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD) 2022*.
- 27 Chauhan, J., & **Ranjan, R.** (2023). Computational study of supersonic flow past compression and expansion corners. In *Proceedings of 14th Asian Computational Fluid Dynamics Conference 2023*.
- 28 Patel, K. S., Maruthi, N. H., **Ranjan, R.**, Deshpande, S. M., & Narasimha, R. (2023). Direct numerical simulation of flow over an high-pressure turbine blade of a small experimental turbofan engine. In *Proceedings of 14th Asian Computational Fluid Dynamics Conference 2023*.
- 29 Phirke, Y., Giri, H., Modani, M., & **Ranjan, R.** (2023). Multi-GPU acceleration and optimization of a high-order curvilinear CFD code. In *Proceedings of 14th Asian Computational Fluid Dynamics Conference 2023*.

- 30 Prabtani, K. M., & **Ranjan, R.** (2023a). Numerical investigation of shock wave-boundary layer interactions inside scramjet inlet. In *Korea computational fluid engineering society conference proceedings (ACFD 2022)* (pp. 189–190).
- 31 Sharma, K., & **Ranjan, R.** (2023). Numerical investigation of separation control in low-pressure turbines using dimpled surfaces. In *Proceedings of 14th Asian Computational Fluid Dynamics Conference 2023*.
- 32 Doshi, P., **Ranjan, R.**, & Gaitonde, D. (2020). Stability characteristics of open cavities at high mach numbers. In *Aps division of fluid dynamics meeting abstracts* (Fo7–002).
- 33 **Ranjan, R.**, & Gaitonde, D. (2020b). Unsteady dynamics of upswept-base-cylinder afterbody flows. In *Aps division of fluid dynamics meeting abstracts* (Y12–004).
- 34 Patel, K. S., Maruthi, N., **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2018). A critical comparison of DNS versus model results on an HPT blade for a small engine. In *Proceedings of 20th AeSI CFD symposium*.
- 35 Patel, K. S., **Ranjan, R.**, Maruthi, N., Deshpande, S., & Narasimha, R. (2017). Predictions of aero-thermal loading on an HPT stator blade of a typical small turbofan engine. In *Proceedings of 19th AeSI CFD symposium*.
- 36 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2016a). A critical comparison of RANS, LES, Hybrid LES/RANS and DNS studies of the flow past a low pressure turbine blade in a cascade. In *Proceedings of 18th AeSI CFD symposium* (CP7, 6 pages).
- 37 **Ranjan, R.**, Rakshith, B., Deshpande, S., & Narasimha, R. (2015). A RANS study of optimal low-drag wings for tractor propeller-driven aircraft. In *Proceedings of 7th symposium on applied aerodynamics and design of aerospace vehicles (SAROD-2015)* (CP180, 4 pages).
- 38 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2014b). The effects of curvature on the turbulent boundary layer in flow past turbine blades. In *Proceedings of 16th AeSI CFD symposium* (CP29, 5 pages).
- 39 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2013a). Numerical methodology for simulating flows over turbine blades. In *Proceedings of 14th Asian Congress of Fluid Mechanics* (Vol. 2, pp. 515–521).
- 40 **Ranjan, R.**, Deshpande, S., & Narasimha, R. (2013b). DNS of flow past LPT blades. In *Proceedings of 15th AeSI CFD symposium*.
- 41 Deshpande, S., Baig, R., **Ranjan, R.**, Nikam, K., & Lagu, R. (2009). CFD simulations of horizontal axis wind turbine (hawt) blades for variation with wind speed. In *Proceedings of 2nd national conference CFD applications in power and industry sectors*.
- 42 Khare, A., Baig, R., **Ranjan, R.**, Shah, S., Pavithran, S., Nikam, K., & Moitra, A. (2009a). Computational simulation of flow over a high lift trapezoidal wing. In *Proceedings of IISc centenary international conference and exhibition on aerospace engineering (iceae)*.

Conference Presentations

- 1 Chanda, S., Tiwari, A., Kumawat, S., Tripathi, A., & **Ranjan, R.** (2025). Continuum simulation of granular flows in rotating cylinder and hopper flows. DAE-BRNS Symposium on Advances in Atomistic and Continuum Modeling (DAE-SAACM 2024), Mumbai.
- 2 Kumar, P., & **Ranjan, R.** (2025b). Prediction of shocks using a consistent PINN-based approach. Annual Meeting of EMS activity group on Scientific Machine Learning.
- 3 Kumar, P., Tongaria, M., & **Ranjan, R.** (2025a). Improving turbulent flow datasets using residual-based attention PINN (RBA-PINN). Mathematical and Scientific Machine Learning (MSML).
- 4 **Ranjan, R.** (2025). Hpc in the design of transport vehicles: Turboprops, bullet trains, and hyperloops. High-performance Computing Symposium 2025. Invited talk.

- 5 Aggarwal, A., Kushari, A., & **Ranjan, R.** (2024). Effect of curvature on thermal and pressure loads in hypersonic flow over double wedge.
- 6 **Ranjan, R.** (2024a). A gpu-enabled 3d LES solver for low subsonic to hypersonic flow computations. Computations of High-Speed, Turbulent, and Complex Flows (CHTC) 2024, IIT Hyderabad. Invited paper.
- 7 **Ranjan, R.** (2024b). Cloud computing for CFD simulations: Current status and challenges. Australia-India Workshop Towards Standardisation and Development of Privacy-Enhancing Cryptographic Techniques for Cloud Computing (AICCTP) 2024, IIT Kanpur. Invited talk.
- 8 **Ranjan, R.** (2024c). Generalized physics-informed neural network approach for compressible flows with shocks. Indo-Japanese Collaborative Workshop on CFD-based AI and HPC. Invited talk.
- 9 Vanipenta, S., Chauhan, J., & **Ranjan, R.** (2024). Cavity-based passive control approaches for swbli in scramjets.
- 10 Maruthi, N. H., **Ranjan, R.**, Deshpande, S. M., Narasimha, R., Naditale, S. R. T., & Sharma, B. (2019). Performance of a compressible DNS code on latest gpu architectures. NVIDIA GPU Technology Conference (GTC) 2019. San Jose, USA. Retrieved from <https://developer.nvidia.com/gtc/2019/video/S9678>
- 11 Maruthi, N. H., **Ranjan, R.**, Deshpande, S. M., Narasimha, R., Sharma, B., & Naditale, S. R. T. (2018). Gpu-acceleration of an unstructured compressible DNS code for realistic applications. NVIDIA GPU Technology Conference (GTC) 2018. San Jose, USA.
- 12 Maruthi, N. H., **Ranjan, R.**, Deshpande, S. M., Narasimha, R., Sharma, B., & Naditale, S. R. T. (2017). GPU acceleration of a DNS code for gas turbine blade simulations. Computational Science Symposium. Best paper award. Bengaluru, India.
- 13 **Ranjan, R.**, & Narasimha, R. (2016). Quasi-laminar theory for relaminarization in a high-Re highly accelerated turbulent flow. 8th European Postgraduate Fluid Dynamics Conference. Warsaw, Poland.
- 14 **Ranjan, R.**, Deshpande, S. M., & Narasimha, R. (2014a). ANUROOP: a new computational tool for tackling the fluid-dynamical zoo that resides on a gas-turbine blade (poster). 'JNCASR In House Symposium'.
- 15 **Ranjan, R.**, Deshpande, S. M., & Narasimha, R. (2014b). Understanding flow past a low-pressure turbine blade (poster). 'TWAS ROCASA Regional Conference of Young Scientists on Recent Trends in Physical and Biological Sciences'.
- 16 **Ranjan, R.**, Deshpande, S. M., & Narasimha, R. (2013). Flow past a gas turbine blade as seen by DNS (poster presentation). Fluids Days, IISc, Bengaluru.
- 17 **Ranjan, R.**, Singh, A., Nikam, K., Goldberg, U., Perroomian, O., Gupta, V., & Chakravarthy, S. (2010). Numerical prediction capability of current-generation CFD technology/codes for high-lift configurations. 1st AIAA CFD High Lift Prediction Workshop (HiLIFTPW-1) (Associated with the 28th AIAA Applied Aerodynamics Conference). AIAA. Chicago, IL.
- 18 Shinde, G., Khare, A., **Ranjan, R.**, & Shah, S. (2009). Nasa trapezoidal wing CFD simulations for lift and drag predictions and scalability benchmarks on eka. Symposium on Promotion of Indigenous CFD in Engineering Sciences (SPICES09). Pune, India.
- 19 **Ranjan, R.**, Singh, A., Khare, A., Nikam, K., Goldberg, U., Perroomian, O., ... Chakravarthy, S. (2009). Prediction of drag for wing-body-horizontal configurations representative of transonic transport. 4th AIAA CFD Drag Prediction Workshop. AIAA. San Antonio, TX.