

Kamal Tewari

Mechanical Engineering Discipline

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Academic Details

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|----------------------------------|--|-----------|-----------|
| PhD | Indian Institute of Technology Delhi | 10(CGPA) | 2017-cnt. |
| M. Tech (Mechanical Engineering) | Indian Institute of Technology Gandhinagar | 9.9(CGPA) | 2017 |
| B. Tech (Mechanical Engineering) | THDC Institute of Hydropower Eng. & Tech. | 83.74% | 2015 |
| Class XII – C.B.S.E. | Nirmala Convent Sr. Sec. School Kathgodam | 90 % | 2011 |
| Class X – C.B.S.E. | Nirmala Convent Sr. Sec. School Kathgodam | 91.2% | 2009 |

Projects

- **Understanding the interaction of large scale flow with large scale obstacles in atmosphere through numerical modelling** *[July,2017-Present]*
 - Understanding the generation of stationary waves through orography and their non linear interaction through simpler like aquaplanet, single column models in GCMs and then applying the knowledge to understand their importance for our planet earth by using hierarchical numerical modelling.
 - Understanding the generation of orographically induced stationary waves in atmosphere and implementing suitable parameterization in climate models for Gravity waves to remove existing biases over India.
 - Understanding the role of Mountains and surface orography like that of Himalayas, Antarctica etc in global and regional circulation.
 - Evaluation of CMIP 5 models in capturing orographically related processes over the Asian Domain.
- **LES of passive noise cancellation in subsonic jets.** *[Jan,2017-June,2017]*
 - Noise cancellation by use of chevrons was analysed by help of Large Eddy Simulations performed on subsonic jets with a mach number of 0.75.
- **Active noise cancellation** *[March,2016-Jan,2017]*
 - O Noise pollution has become a serious concern in our day-to-day life. This project aims at finding ways to control this problem. In this regard, CFD, as well as Experimental Analysis of Active noise cancellation system by a feedback controller, was done. The same principle can be used in Automobiles, HVAC ducts, headphones to cancel unwanted noise.
- **Analysis of flow through a CD nozzle** *[Sep,2015-Dec ,2015]*
 - Numerical as well as CFD analysis of flow through a convergent-divergent nozzle.
- **Enhancement of productivity in different shops** *[June,2014-July2014]*
 - FSO Improvement in metal finish line from 60% to 80% at TATA Motors, Uttarakhand.

Technical Skills

- Working knowledge of CFD software like STAR CCM+, Fluent, Solid Works.
- Working knowledge of climate models like NCAR CAM.
- Languages: MATLAB, C, C++, Java, NCL, Fortran.
- Areas of interest: Climate Modelling, Aerodynamics, Fluid mechanics, CFD, Heat transfer, Feedback control, Compressible flows.

Advanced Courses Done

Computational Fluid Dynamics, Turbulence modelling, Aerodynamics, Compressible flows, Earth System Modelling, Advanced Fluid Mechanics.

Professional Honours, Awards and Fellowships

- Winner of **President's Gold medal** for Mtech 2015-2017 batch.
- Winner of **Institute Gold medal** in Mechanical Engineering at IIT Gandhinagar.
- *Institute Fellowship* by IIT Delhi for pursuing PhD.
- *Shastri Fellowship* by SICI for pursuing research work at University of Toronto, Canada.
- *JASSO Fellowship* by Hiroshima University for ILDP Exchange program.
- *Institute Fellowship* by IIT Gandhinagar for pursuing Mtech.
- Awarded **CSSS 2011-2015** CBSE Scholarship by Ministry of HRD, India.
- Scored 676/1000 in GATE 2015 in Mechanical Engineering discipline with 98.2% tile.

EXTRA -CURRICULAR ACTIVITIES: -

- Won 1st prize in 'IEEE Quiz 2013' at the college level (technical quiz).
- Taught Engineering Mechanics Tutorials session at IIT Delhi for B Tech 2nd year students.
- Taught Fluid Mechanics Lab at IIT Delhi for B Tech 2nd year students.
- Taught Solid Mechanics Lab at IIT Gandhinagar for B Tech 2nd year students.
- Organised a MATLAB, Star CCM+ workshop at IIT Gandhinagar for MTech students.
- 1st Position in Sardar Patel's Essay Competition, organized by Uttarakhand Technical University.
- 2nd Position in Aptitude test conducted at collage level.
- Member of Discipline Committee of "Escalade", 2013, an annual college festival
- Was a member of Nirmala Convent's Cricket team.

Publications

- K. Tewari, S. Mishra, A.Dewan and H Ozawa, 2019, Orographic Effects of Antarctica on the Atmosphere, TAAC (Under Review).
- K. Tewari, S. Mishra and A.Dewan, 2019, Orographic Effects of Antarctica on the South Asian Monsoon Circulation, Environmental Research Letters (Under Review).
- K. Tewari, V. Narayanan and A. Dewan, 2018, Large Eddy Simulation of Passive Noise Reduction in Subsonic Jets, Proc. 7th International and 45th National Fluid Mechanics and Fluid Power (FMFP) Conference, IIT Bombay, Mumbai (Paper No. 20).

Academic Referees

Prof. Anupam Dewan
R.C.Malhotra Chair Professor
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Prof. Saroj Kant Mishra
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I hereby declare that particulars given herein are true to the best of my knowledge and belief.

KAMAL TEWARI