

# Kowsik Bodi

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## Research Interests

Plasma Physics    Stability and transport in fusion plasmas, Turbulence in plasmas  
Combustion/Fluid Mechanics    Turbulent Mixing and Combustion, Geophysical Fluid Dynamics

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## Education

- 2005–2009    **Ph.D.**, *University of California at San Diego*, La Jolla, *GPA: 3.93/4.0.*  
Major: Engineering Sciences (Aerospace Engineering)
- 2002–2005    **M.Sc.(Engg)**, *Indian Insititute of Science*, Bangalore, *GPA: 7.50/8.0.*  
Major: Aerospace Engineering
- 1998–2002    **B.Tech.**, *Indian Insititute of Technology Madras*, Chennai, *GPA: 9.11/10.0.*  
Major: Aerospace Engineering

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## Experience

### Teaching

Sept.–Dec. 2007    **Graduate Teaching Assistant**, *UCSD*, La Jolla.  
Undergraduate course on fluid mechanics, CENG 101A, taught by Prof. S. I. Krasheninnikov

### Research

- 2005–2009    **Graduate Research Assistant**, *UCSD*, La Jolla.  
Computational investigations on the generation and propagation of blobs in tokamak edge plasma  
Modeling and simulation of anomalous radial transport in the kinetic code, TEMPEST
- 2002–2005    **Research Assistant**, *CGPL, IISc*, Bangalore.  
Computational investigation of the integration of a gas turbine combustor to a Gasifier  
Large Eddy Simulations of compressible mixing layers
- 1999–2001    **Project Assistant**, *Gas Dynamics Lab, IITM*, Chennai.  
Experimental investigation of vortex shedding in segmented solid rocket motors

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## Computer skills

Experience in numerical simulations using programming languages: C, C++, Fortran and Matlab in Windows and UNIX/Linux operating systems  
Worked with IDL, Mathematica and Python  
Experience in using commercial CFD software: CFX, Fluent

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## Publications

My full name is Vasudeva Raghavendra Kowsik Bodi. It is alternately listed as K. Bodi (for Kowsik Bodi) or B. V. R. Kowsik in the publications listed below.

### Refereed Publications (Journal)

K. Bodi, S. I. Krasheninnikov, and A. I. Smolyakov, "Blob dynamics in an inhomogeneous plasma", *Physics of Plasmas*, 15 (10), 2008. A copy is accessible at <http://link.aip.org/link/?PHP/15/102304/1>

B. Karthik, N. Venkateswarlu, B.V.R. Kowsik, S.R. Chakravarthy, R.I. Sujith and E.G. Tulapurkara, "Vortex-Resonant Sound Interactions in a Duct Containing an Orifice", *Journal of Aerospace Sciences & Technologies*, Vol. 56, No. 4, Nov., 2004.

### Refereed Publications (Conference)

X. Q. Xu, E. Belli, K. Bodi, J. Candy, C. S. Chang, R. H. Cohen, P. Colella, A. M. Dimits, M. R. Dorr, Z. Gao, J. A. Hittinger, S. Ko, S. Krasheninnikov, G. R. McKee, W. M. Nevins, T. D. Rognlien, P. B. Snyder, J. Suh, and M.V. Umansky, "Dynamics of kinetic geodesic-acoustic modes and the radial electric field in tokamak neoclassical plasmas", *Nuclear Fusion*, 49 (6), 2009. A copy is accessible at <http://stacks.iop.org/0029-5515/49/065023>

K. Bodi, S. I. Krasheninnikov, and A. I. Smolyakov, "On blob generation mechanisms in tokamak edge plasma", *Journal of Nuclear Materials*, 2009. Article in Press. A copy is accessible at <http://www.sciencedirect.com/science/article/B6TXN-4VFK84W-21/2/ce544d1b2b31b4989d5658316f4bdca3>

K. Bodi, S. I. Krasheninnikov, and A. I. Smolyakov, "On the mechanisms of generation of meso-scale convective structures in tokamak edge plasma", *Contributions to Plasma Physics*, 48 (1-3), 2008. A copy is accessible at <http://www3.interscience.wiley.com/journal/117936715/abstract>

X. Q. Xu, Z. Xiong, M. R. Dorr, J. A. Hittinger, K. Bodi, J. Candy, B. I. Cohen, R. H. Cohen, P. Colella, G. D. Kerbel, S. Krasheninnikov, W. M. Nevins, H. Qin, T. D. Rognlien, P. B. Snyder, and M. V. Umansky, "Edge gyrokinetic theory and continuum simulations", *Nuclear Fusion*, 47 (8), 2007. A copy is accessible at <http://stacks.iop.org/0029-5515/47/809>

### Non-refereed Publications (Conference)

B. Karthik, B.V.R. Kowsik, N. Venkateswarlu, S.R. Chakravarthy and R.I. Sujith, "Acoustic Field in a Duct Resulting from Vortex Shedding from Multiple Restrictors", AIAA paper 2001-1105, *39th AIAA Aerospace Science Meeting and Exhibit*, Jan., 2001, Reno, Nevada.

N. Venkateswarlu, V. Rayapudi, B.V.R. Kowsik, B. Karthik, S.R. Chakravarthy and R.I. Sujith, "Vortex Shedding in Segmented Solid Rocket Motors: Acoustic Mode Shifts", AIAA paper 2000-3808, *36th Joint Propulsion Conference and Exhibit*, July 2000, Huntsville, Alabama.

B. Karthik, N. Venkateswarlu, B.V.R. Kowsik, S.R. Chakravarthy, R.I. Sujith and E.G. Tulapurkara, "Vortex-Resonant Sound Interactions in a Duct Containing an Orifice", AIAA paper 2000-2561, *Fluids 2000*, Denver, Colorado.

V. Rayapudi, N. Venkateswarlu, B. V. R. Kowsik, B. Karthik, R. I. Sujith and S. R. Chakravarthy, "Cold Flow Simulations of Vortex Shedding in Segmented Solid Rocket Motors", *Proceedings of the 51st AGM & Seminar on Advances in Aerospace Technologies*, The Aeronautical Society of India, Jan. 21-22, 2000, Hyderabad.

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## References

### **Professor Sergei I. Krasheninnikov**

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