

Kalyana Babu Nakshatrala

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A. Education and Training

B. Tech. Civil Engineering, Indian Institute of Technology-Madras, May 2000

M.S. Civil Engineering, University of Illinois at Urbana-Champaign, May 2002

M.S. Applied Mathematics, University of Illinois at Urbana-Champaign, May 2007

Ph.D. Civil Engineering, University of Illinois at Urbana-Champaign, May 2007 (with a minor in Computational Science and Engineering)

Postdoc Subsurface flows, University of Illinois at Urbana-Champaign, June 2007-Dec 2008

B. Professional Appointments

Assistant Professor, Department of Civil and Environmental Engineering, University of Houston, September 2011 onwards.

Assistant Professor, Department of Mechanical Engineering, Texas A&M University, January 2009 – August 2011.

Postdoctoral Research Associate, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, June 2007 – December 2008.

Graduate Research Assistant, Center for Simulation of Advanced Rockets, University of Illinois at Urbana-Champaign, August 2000 – May 2007.

C. Selected Publications

[1] **K. B. Nakshatrala**, A. Prakash, and K. D. Hjelmstad, “On dual Schur domain decomposition method for linear first-order transient problems,” **Journal of Computational Physics**, 228: 7957-7985, 2009.

[2] D. Z. Turner, **K. B. Nakshatrala**, and K. D. Hjelmstad, “A variational multiscale Newton-Schur approach for the incompressible Navier-Stokes equations,” **International Journal for Numerical Methods in Fluids**, 62:119-137, 2010.

[3] D. Z. Turner, **K. B. Nakshatrala**, and K. D. Hjelmstad, “On the stability of bubble functions and a stabilized mixed finite element formulation for the Stokes problem,” **International Journal for Numerical Methods in Fluids**, 60:1291-1314, 2009.

- [4] P. B. Nakshatrala, **K. B. Nakshatrala**, and D. A. Tortorelli, “*A time-staggered partitioned coupling algorithm for transient heat conduction*,” **International Journal for Numerical Methods in Engineering**, 78:1387-1406, 2009.
- [5] **K. B. Nakshatrala**, K. D. Hjelmstad, and D. A. Tortorelli, “*A FETI-based domain decomposition technique for time dependent first-order transient systems based on a DAE approach*,” **International Journal for Numerical Methods in Engineering**, 75:1385-1415, 2008.
- [6] **K. B. Nakshatrala**, and A. J. Valocchi, “*Non-negative mixed finite element formulations for a tensorial diffusion equation*,” **Journal of Computational Physics**, 228:6726-6752, 2009.
- [7] **K. B. Nakshatrala**, A. Masud, and K. D. Hjelmstad, “*On finite element formulations for nearly incompressible linear elasticity*,” **Computational Mechanics**, 41:547-561, 2008.
- [8] **K. B. Nakshatrala**, D. Z. Turner, K. D. Hjelmstad, and A. Masud, “*A stabilized mixed finite element method for Darcy flow based on a multiscale decomposition of the solution*,” **Computer Methods in Applied Mechanics and Engineering**, 195:4036-4049, 2006.
- [9] S. Darbha, **K. B. Nakshatrala**, and K. R. Rajagopal, “*On the vibrations of lumped parameter systems governed by differential-algebraic equations*,” **Journal of the Franklin Institute**, 347: 87-101, 2010.
- [10] H. Nagarajan, and **K. B. Nakshatrala**, “*Enforcing the non-negativity constraint and maximum principles for diffusion with decay on general computational grids*,” **International Journal for Numerical Methods in Fluids**, DOI: 10.1002/flid.2389, 2010.

D. Synergistic Activities

- Reviewer of 6 international journals (JCP, CMAME, IJNME, ASME JAM, ASCE JEM, IJES).
- Organizer of mini-symposium (*Transport in heterogenous porous media*), ASME IMECE Conference, Vancouver, Canada, November 12-18, 2010.
- Organizer of mini-symposium (*Flow and transport in heterogenous porous media*), 11th US National Congress on Computational Mechanics, Minneapolis, Minnesota, July 24 - 28, 2010.
- NSF panelist (Mechanics of Materials Program), February 2010.
- Member of SIAM and ASME

E. Awards & Honors

- Student-Led Award for Teaching Excellence (SLATE), Texas A&M University, July 2009 (awarded to only 10 instructors per semester in the whole college of engineering).
- Certificate for being in top 0.1% nationwide in Mathematics, Central Board for Secondary Education, India, 1996.