

Assistant Professor

Qualification : B.Sc.(Hons.), BE, ME, Ph.D.

Address : Electrical Engineering Department

I.I.T. Roorkee

Roorkee

Areas of Interest :

- Control optimisation system engineering
- Model order reduction of large scale systems

Awards/Prizes

1. Received best paper presentation award from the system society of India (SS I) at the National System Conference held at IIT Kharagpur during Dec 13-15 1989 on the paper, Prasad R, J.Pal and A.K.Pant, Stable Reduced order models for Discrete time systems Proc. Conf. NSC89 pp.150-152,1989.
2. Received Merit Certificate from the Institute of Engineers India on the Paper Prasad R and J.Pal use of Continued fraction expansion for stable reduction of linear multivariable system ,Journal of Institution of Engineers (India) Vol 72,pp113-116,oct 1991
3. Received best papers presentation award from the system society of India(SSI) at the National System Conference held at Vikram Sarabhai space centre(VSSC) Trivendrum during Dec 19-21,1996, On the paper Prasad R and S.Devi pade type model order reduction of linear discrete time multivariable system proc. Conf. N5C96 pp119-123 1996
4. Received best paper presentation award from the system society of India(SSI) the National system conference held at Banaras Hindu University(BHU) during Dec 9-11,1999 on the paper Prasad R, Reduction of Linear Time Invariant Multi Input Multi Output System proc. Conf. NSC99 pp157-161.

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Courses Developed at UG/PG Level

- System theory
- System optimization
- Operation research

- Optimal systems
- Large scale systems
- Also reviewed some papers for the conferences and journal of Computer and Electrical Engineering.

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Projects

(A) MINOR PROJECTS:

Three projects against minor UGC Research grant under DRIL as given below:

1. Reduced order models in control systems 1994-95
2. Reduced model in control systems 1995-96
3. Reduction and Design of linear dynamic systems 1998-99 & 1999-2000

(B) AICTE R&D PROJECT

Presently working on AICTE R&D project entitled "Derivation of Reduced Order Models for The Design of Optimal Controller". Amount sanctioned Rs. Five Lakhs.

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Administrative Experience

- PROGRAMME OFFICER NSS-from 1984-87 and 1994-97- organized six camps at various places.
- STAFF ADVISER SWIMMING- worked as Addl. Staff advisor/Staff Advisor swimming for five years- Currently associated with the work of installation and commissioning of filtration and chlorination plant at the University Swimming Pool.
- STAFF ADVISER (SA) SERVICES CONSTRUCTION DIVISION: Presently working as a staff advisor services (SA services construction Division.) which covers the responsibilities of managing the water supply and electricity to the university staff.
- OC CONTROL LAB: As O.C control lab a three Term PID Controller Unit was made operational, also a magnetic loading arrangement has been made for two phase AC servo motor under my guidance. Currently engaged in updating the Robotics Lab. Presently processing the purchase case of Robotic Arm with controller
- OTHER RESPONSIBILITIES: OC Time Table, Examination Superintendent OC Placement, Tabulator for BE 1st year and Joint Secretary (Staff Association). Also member of various committee such as PGAPC, BOS (Electrical, Physics &

Mathematical Deptt.), and the committee for the remodelling of the existing swimming pool and installation of the filtration/chlorination plant for the swimming pool.

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Expert Lectures In QIP Courses

Delivered five Lecturers during June 20,1996July 4,1996

1. Time moment matching and Pade approximations for continuous time systems.
2. Improved Pade approximation for continuous time systems
3. Stability Based order reduction methods (Part I)
4. Stability based order reduction methods (Part II)
5. Mixed Method for Model order reduction.

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M.E. Dissertation Guided

1. Use of Reduced Order Models ill Power Systems., Rainji Lal, Jan. 1985
2. Suboptimal Control of Linear Dynamic Systems., Manoj Jain, June, 1987.
3. Goal Progranunig application in Agriculture., Anil Kumar, 1988.
4. Application of Continued Fraction Expansions and inversion toLinear System Reduction., Rohani Kumar Gautain., July, 1989.
5. Optimum model reduction in Frequency domain , S.K Chaturvedi, April, 1990.
6. Model Reduction of Discrete Ti'ne System and its application in Control System design, Sudlijr Kumar, Sept., 1992
7. Suboptimal Control of Linear Dynamic System using Reduced Order Models., Ajay Rathi, Maicli, 1993.
8. Linear System Reduction for Multivariable Systems., Rajesh Kumar, Dec, 1993.
9. Order Reduction of Li'iear Dynanuc Systems in Frequency domain., A. K. Kulshreshtha, Dec.1993.

10. Minimal Realisation of Linear Dynamical Systems., Alok Sharma, Jan, 1994.
11. Reduced Order Dynamic Models for Electric Power Systems., Deep Saxena, Jan, 1994.
12. Computer Aided Approach for obtaining Stable Reduced Order Models., Rajeev Kumar Jain, March, 1995.
- 13 Model Reduction of Linear Dynainic Systems by Scliwarz Approxiination., Pravin Kumar Srivastava, March 1995.
14. Automatic Tuning of Direct Digital Control Loops., Sumit Tomar, March, 1996.
15. Analysis of Boolean Like Traninig Algorithm (BLTA) for Binary Feed Forward Neural Network, Vikas Kumar Malik, March 1996
16. Order Reduction of Linear Dynanuc Systems., Sanjay Pokhriyal(M.Phil), July, 1997.
17. Order Reduction of Linear Dynainic Systems using Pade Approximation, Ashis Agarwal Mardi 1998.
18. Reduction of Discrete Time Systems using Routh Approximation Method. John Heudry , Nov 1998.
19. Model Reduction using Optimuzation Teclniques V.K.Nimesh , March 1999.

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Publications

1. Pal J. and R. Prasad, 'Stable loW order Approximants using continued fraction expansion, 'Advances in modelling and simulation AMSE Press, Vol.8, No.4, pp.49-S8, 1987.
2. Pal J. and R. Prasad, 'Stable reduced order models, using continued fractions', Advances in modelling and simulation, AMSE Press, Vol.10, No.1, pp.25-34, 1987.
3. Pal J., and R. Prasad , 'On system reduction by continued fractions about several points', Advances in modelling and simulation, AMSE Press, Vol.9, No.4 pp.13-22, 1987.
4. Pal J, and R. Prasad, 'Biased reduced order models for discrete time systems', Int. Symp on electronic devices, circuits nd Systems, ISELDECS-87, 'IT Kharagpur Dec., 16-18, 1987.

5. Prasad R. , A.K.Pant and J. Pal, 'Model order reduction using modified truncation', National 5-n conf. Dec. 22-24, R.E.C. Kurukshetra, NSC-1987.
6. Prasad, R., J. Pal, 'On the reduction of discrete time systems using direct methods', proc. Intern. AMSE conf.,Modelling simulation ,New Delhi India,Oct . 28-31,vol .B,pp.3-14,1987.
7. Prasad R.,J.Pal and A.K. Pant, 'Linear multivariable system reduction by continued fraction expansion about a general point 'a' Int. Irif. on signals and systems at Brighton (U.K.), July 12-14, 1989, Advances in modelling and simultion, Vol.79, No.4, pp.47-58, 1990.
8. Pal J and R., Prasad, 'Biased reduced ordet models for discrete time system', systems science J. Vol.18, No.3, pp.41-SO, 1992.
9. Prasad R., J. Pal and A.K. Pant, 'Stable reduced order models for discrete time systems', National systems Conf., Dec. 13-15, IIT, Kharagpur, pp.150-IS2, 1989.
10. Pal J. R. Prasad, 'Multivariable system reduction using the Routh Rurwitz array, Int. conf. on control and modelling Dept. of Electrical Engineering University of Tehran Iran, July 17-20, 1990.
11. Pal J. and R. Prasad, 'Discrete multi variable systems approximation by Pade type modal method Co. 42, Int. Conf on Automation, Roibotics and computer vision (ICARV 90)18-21, Sept.1990.
12. Prasad R., J. Pal and A.K. Pant, 'Controller design using reduced order models', Proc. of 14' National system conf. NSC 90, paper No.2-3-i pp. 188-186, 1990.
13. Prasad R. and J.Pal , 'Use of continued fraction expansion for stable reduction of linear multivariable systems' Journal of institution of Engineers (India) Vol.72, pp. 113-116, Oct. 1991.
14. Prasad R. and J. Pal, 'Stable reduction of linear systems by continued fractions', Journal of Institution of Engineers (India) Vol.72, pp. 113-116, Oct.1991.
15. Prasad R., J. Pal, and A.K. Pant, 'On the reduction of discrete time systems using polynomial derivatives', Proc. of 15' National Systems Conference NSC-91, pp.414S, March 13-15, 1992.
16. Prasad R., 'Order reduction of discrete time systems using stability equation method and weighted time moments', Journal of Institution of Engineers (India) Vol.74, pp.94-99, Nov. 1993.

17. Prasad R. , J. Pal and A.K., Pant, 'Pade type model order reduction for multi-input multioutput systems using stability equation method', Systems Science, J. Vol.21, No.1, pp.5-16, 1995.
18. Prasad R., S., Devi, 'Derivation of stable pade approximants using polynomial derivatives proc. ISIAM 92, Dept. of Mathematics, University of Roorkee, Roorkee, pp.124-129, Feb. 4, 1993.
19. Prasad R. J. Pal and A.K. Pant, 'Multivariable controller design via low order models, Journal of Institution of Engineers (India) IE (I) Journal ET, Vol.76, pp.71-74, March 1996.
20. Chandra B., R. Prasad, and A.K. Kulshrestha, 'Viability of model reduction methods for controller design, 'Int. Conf. on Systems and Science XU, Wroclaw Poland Paper No.12131, Vol.1, pp.377-386, Sept. 12-15, 1995.
21. Kumar A., B. Soni,, S. Kumar and R. Prasad, 'Irrigation and crop planning using Goal Programming ISDA, p.172, 1995.
22. Prasad R., J. Pal and A.K. Pant, 'Multivariable system approximation using polynomial derivatives, Journal of Institution of Engineers (India), IE(J), Journal EL, Vol.76, pp.186-188, 1995.
23. Prasad R., J. Pal and A.K. Pant, 'Mixed routh pade approximation for multivariable systems journal of computers in Electrical Engineering (communicated), 1995.
24. Prasad R., and S. Devi, 'Pade type model order reduction of linear discrete time multivariable systems, 20' National systems conference, pp. 119-123 Dec. 19-21, 1996.
25. Prasad R., J. Pal and A.K. Pant, 'Reduction of discrete multivariable systems using modal 'pade method, Journal of Franklin Institute (communicated) 1996
26. Prasad R., S.P. Sharma and S. Devi, 'An overview of some model order reduction techniques in frequency domain', A conf Deptt. of Mathematics, University of Roorkee, Dec. 18-19, 1996, Mathematics and its applications in Engineering and Industry Narosa Publisliing House, New Delhi, pp.549-556, 1997.
27. Prasad R., E. Fernandez, and D. Saxena, 'Computer aided approach for model order reduction using optimisation and Routh approximation method, Proc. of Int. Conf. on Computer Applications in Electrical Engineering recent advances, CERA 97, pp .485-49, Sept. 8-11, 1997.
28. Prasad R. and A.K. Kulshrestha, 'Application of model reduction methods for controller design', Proc. of Int. Conf. on Computer Applications in Electrical Engineering, recent advances ,CERA 97, pp.503-508, Sept.1997.

29. Prasad R., J. Pal and A.K. Pant, 'Multivariable system reduction using modal methods and pade type approximation, IE(1) Journal- EL Vol 79, pp 84-87 Aug.1998.

30. Prasad R., 'Reduction of Linear time invariant multi-input multi output system Routh's Algorithm,'. Proc. National System Conference NSC, 99 pp.157-161, 1999.

31. Prasad R. and S. Devi, 'Reduction of discrete time multi variable systems using mixed method'. Journal of Institution of Engineers India. Accepted (1999).

32. Prasad R., 'Pade Type Model Order Reduction for multi variable systems using Routh approximation'. Journal computers and Electrical Engineering pp. 1-IS, 2000.