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Academic Career

- 2009: **Ph D in Science,** Jadavpur University, Kolkata, India.
- 2004-2006 : Worked as a Junior Research Fellow under a UGC-CSIR in Department of Physics, Jadavpur University, Kolkata, India.
- 2004: M. Sc. in Applied Mathematics from University of Calcutta, Kolkata with specialization in Advanced Mathematical Ecology.
- 2002: B.Sc. (Mathematics) from Barackpur Rastraguru Surendranath College under University of Calcutta.
- 1998: Higher Secondary Examination from Haracknagar A. M. Institution, Beldanga, Murshidabad with Board W.B.C.H.S.E.
- 1996: Secondary Examination from Haracknagar A. M. Institution, Beldanga, Murshidabad with Board W.B.B.S.E.

Teaching Experience

1. Assistant Professor in Physics and Applied mathematics Unit, Indian Statistical Institute, Kolkata
   From August, 2012 to present.
2. Assistant Professor in Mathematics, University of Kalyani, West Bengal-741235
   From April, 2012 to July, 2012.
3. Assistant Professor in Mathematics, Dinabandhu Andrews College, Garia, Kolkata-700084
   From 2006 to 2012.

Research Areas

1. Dynamical Systems and its chaotic properties
   - i) Stability analysis (local and global stability)
   - ii) Control of chaos using different methods
   - iii) Bifurcation
2. Time delayed systems and its properties
   - i) Local and global stability analysis
   - ii) Lyapunov exponents for delay dynamical systems
   - iii) Modulated time delay
   - iv) Bifurcation and chaos control
3. Chaos synchronization and its applications
   - i) Different types of synchronization
   - ii) Cryptography using synchronization
   - iii) Chaos control using synchronization
4. Time-delayed Complex network
   - i) Dynamical behaviour
   - ii) Chaos synchronization

Publications

2014

1) S. K. Bhowmick, **Dibakar Ghosh**, P. Roy, S. K. Dana, K. Murali, and S. Sinha,
International Journal of Bifurcation and Chaos, 24(2), 1450014-1—1450014-9, 2014.

2013

2) **Dibakar Ghosh** and S. Banerjee,
"Projective synchronization of time-varying delayed neural network with adaptive scaling factors"
Chaos, Solitons & Fractals, 53, 1-9,2013.

3) A. Ray, A. Roy Chowdhury and **Dibakar Ghosh**,
"Effect of noise on chaos synchronization in time-delayed systems: Numerical and experimental observations",
Physica A, 392, 4837-4849, 2013.

4) S. K. Bhowmick, **Dibakar Ghosh**, P. K. Roy, J. Kurths and S. K. Dana,
"How to induce multiple delays in coupled chaotic oscillators?",
Chaos, 23, 043115-1--043115-7, 2013.

2012

5) S. K. Bhowmick, C. Hens, **Dibakar Ghosh** and S.K.Dana,
"Mixed synchronization in chaotic oscillators using scalar coupling"
Physics Letters A, 376(36) (2012) *2490-2495*.

6) **Dibakar Ghosh**, Ioan Grosu and S. K. Dana,
"Design of coupling for synchronization in time-delayed systems"
CHAOS, 22 (2012) 033111.

7) R. Banerjee, **Dibakar Ghosh**, E.Padmanaban, L.M.Pecora, R. Ramaswamy and S.K.Dana,
"Enhancing synchrony in chaotic oscillators by dynamical relaying"
Physical Review E, 85(2012), 027201.

2011

8) P. Saha, **Dibakar Ghosh**, A. Roy Chowdhury,
"Modified projective Synchronization of different order chaotic system with adaptive scaling factor"
International Journal of Applied Nonlinear Science(2011) Accepted.

9) **Dibakar Ghosh** and Bidyut K. Bhattacharyya,
"Generalized synchronization-based multiparameter estimation in modulated time-delayed systems"
AIP Advances, 1(2011)032144.

10) S.K.Bhowmick, **Dibakar Ghosh**, S. K. Dana,
"Synchronization in counter-rotating coupled oscillators"
CHAOS, 21(2011) 033118.

11) **Dibakar Ghosh,**
"Projective-dual synchronization in delay dynamical systems with time-varying coupling delay"
Nonlinear Dynamics , 66(4)(2011),717-730.

12) S. Banerjee, A. Das, **Dibakar Ghosh**, M. Mitra and A.Roy Chowdhury
" Existence of Hyperchaos and its Control in Kuramoto-Shivashinky Equation"
International Journal of Nonlinear Science,11(3)(2011)338-347.

13) A. Mukherjee, **Dibakar Ghosh** and S. Banerjee,
"Synchronization of time delayed systems by common delay time modulations"
ISRN Applied Mathematics, Volume 2011, Article ID 218458, 8 pages. DOI:10.5402/2011/218458.

2010

14) **Dibakar Ghosh,** A. Ray and A. Roy Chowdhury,
"Heteroclinic orbit, Forced Lorenz system and Chaos"
ASME, Journal of Computational and nonlinear dynamics, 5 (2010) 011008.

15) **Dibakar Ghosh**, P. Saha and A. Roy Chowdhury,
" Linear observer based projective synchronization in delay Rossler system "

Communication in Nonlinear Sciences and Numerical Simulation, **15(2010) 1640-47.**

16) Dibakar Ghosh
"Nonlinear active observer based generalized synchronization in time delayed systems"
Nonlinear Dynamics, 59 (2010)289-296.

17) Dibakar Ghosh and Sikha Bhattacharya
"Projective synchronization of new hyperchaotic system with fully unknown parameters"
Nonlinear Dynamics, 61(2010)11-21.

18) Dibakar Ghosh and A. Roy Chowdhury,
"Lag and anticipatory synchronization based parameter estimation scheme in modulated time delayed systems"
Nonlinear Analysis: Real World Applications, 11(2010)3059-3065.

19) Dibakar Ghosh and A. Roy Chowdhury,
"Nonlinear observer-based impulsive synchronization in chaotic systems with multiple attractors"
Nonlinear Dymanics,60(4) (2010)607-613.

20) Dibakar Ghosh and A. Roy Chowdhury,
"Parameter estimation of delay dynamical system from a scalar time series under external noise"
Applied Mathematics and Computation, 216(2010)2069-2076.

21) Dibakar Ghosh and A. Roy Chowdhury,
"Dual-anticipating, dual and dual-lag synchronization in modulated time-delayed systems",
Physics Letters A, 374(2010)3425-3436.

22) Dibakar Ghosh,

"Projective synchronization in multiple modulated time-delayed systems with adaptive scaling factor**"**

Nonlinear Dynamics, 62(4)(2010)751-759.

23) Dibakar Ghosh, Santo Banerjee, and A. Roy Chowdhury,
"Generalized and projective synchronization in modulated time delayed systems"
Physics Letters A, 374 (2010)2143-2149.

24) Dibakar Ghosh,
"Erratum:Generalized projective synchronization in time-delayed systems—Nonlinear observer approach"
CHAOS, 20(2010)029902.

25) Dibakar Ghosh and S. Banerjee,
"Exponential stability criterion for chaos-synchronization in modulated time-delayed systems"
Nonlinear Analysis Series B: Real World Applications, 11(2010)3704-3710.

2009

26) Dibakar Ghosh,
"Generalized projective synchronization in time-delayed systems—Nonlinear observer approach"
CHAOS, 19(2009)013102.

27) Dibakar Ghosh,
"Stability and projective synchronization in multiple delay Rossler system"
International Journal of Nonlinear Science, Vol.7, No. 2 (2009)207-214.

28) Dibakar Ghosh,
"Time scale synchronization between two different time-delayed systems"
Electronic Journal of Theoretical Physics, 6(21) (2009)125-138.

29) A. Ray, **D. Ghosh** and A. Roy Chowdhury,
"Topological study of multiple co-existing attractor in a nonlinear system"
Journal of Physics A: Mathematical and Theoretical, 42 (2009) 385102.

2008

30) Dibakar Ghosh,
"Nonlinear observer-based synchronization scheme for multiparameter estimation"
Europhysics Letters, 84 (2008)40012.

31) Dibakar Ghosh, S. Banerjee,
"Adaptive scheme for synchronization-based multiparameter estimation from a single chaotic time series and its applications"
Physical Review E, 78(2008)056211.

32) A. P. Misra, **Dibakar Ghosh** and A. Roy Chowdhury,
"A novel Hyperchaos in the quantum Zakharov system for plasmas"
Physica Letters A, 372(2008)1469-1476.

33) **Dibakar Ghosh**, P. Saha and A. Roy Chowdhury,
"On the study of delay feedback control and adaptive synchronization near sub-critical Hopf bifurcation"
International Journal of Modern Physics C,19(1) (2008)169-185.

34) S. Banerjee, **Dibakar Ghosh** and A. Roy Chowdhury,
"Multiplexing synchronization and its applications in cryptography"
Physica Scripta, 78 (2008), 015010 .

35) A. Ray, **Dibakar Ghosh** and A. Roy Chowdhury,
"On the chaotic aspects of three wave interaction in a magnetized plasma"
Physica Letters A, 372(2008)5329-5335.

36) **Dibakar Ghosh**, A. Roy Chowdhury and P. Saha,
"Bifurcation continuation,chaos and chaos control in nonlinear Bloch system"
Communication in Nonlinear Sciences and Numerical Simulation, 13(2008)1461-71.

37) **Dibakar Ghosh**, A. Roy Chowdhury and P. Saha,
"Multiple delay Rossler System --Bifurcation and chaos control"
Chaos, Soliton & Fractals,35 (2008)472-485.

38) **Dibakar Ghosh**, A. Roy Chowdhury and P. Saha,
"On the various kinds of synchronization in delayed Duffing--Van der Pol system"
Communication in Nonlinear Sciences and Numerical Simulation, 13(2008)790-803.

39) **Dibakar Ghosh** and A. Roy Chowdhury,
"Comparison of Empirical Mode Decomposition and Wavelet Approach for the Analysis of Time Scale Synchronization"
Chaos and Complexity Letters, Vol. 3(2)(2008)97-110.

40) **Dibakar Ghosh**, A. Ray and A. Roy Chowdhury,
"Generalized and phase synchronization between two different time-delayed systems"
Modern Physics Letters B, 22(19)(2008)1867-1878.

41) S. Banerjee, **Dibakar Ghosh**, A. Ray and A. Roy Chowdhury,
"Synchronization Between Two Different Time Delayed Systems and Image Encryption"
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42) **Dibakar Ghosh**, S. Banerjee and A. Roy Chowdhury,
"Synchronization between variable time delayed systems and cryptography"
Europhysics Letters, 80(2007)30006.

43) **Dibakar Ghosh** and A. Roy Chowdhury,
"Various Types of Chaos Synchronization - A Comparative Study of Empirical Mode Decomposition and Wavelet Approach"
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44) **Dibakar Ghosh** and A. Roy Chowdhury,
"On the Bifurcation Pattern and Normal Form in a Modified Predator-Prey Nonlinear System"
ASME, Journal of Computational and Nonlinear Dynamics,2(2007)267-273.

45) **Dibakar Ghosh**, P. Saha and A. Roy Chowdhury,
"On synchronization of a forced delay dynamical system via the Galerkin approximation"
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