CURRICULUM VITAE

DR. POONAM REDHU
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Social navigation URLs
Research Gate https://www.researchgate.net/profile/Dr_Redhu
Google scholar *https://scholar.google.co.in/citations?user=Bu_DTlsAAAAJ&hl=en*

Current Research:

Currently, I am working on mathematical modelling and numerical simulation of traffic flow using the lattice hydrodynamic approach. In my research, I model the nature of traffic flow dynamics with the help of lattice hydrodynamic approach on a unidirectional road in one and higher dimensions. In future, I am willing to work in cellular automata approach and coupled map lattice model. I am also planning to work in nonlinear dynamics theory.

Educational Qualification:

Examination	Name of Board/University	Year of passing
10^{th}	Board of Secondary Education, Haryana	2002
12^{th}	Central Board of Secondary Education	2004
B.Sc	Kurukshetra University, kurukshetra	2007
M. Sc	Maharshi Dayanand university, Rohtak	2009
B.Ed	Kurukshetra University, kurukshetra	2010
NET	CSIR-JRF	2010
Ph.D	Indian Institute of Technology, Ropar	2016

Teaching Experience:

I taught the following PG courses in MD University at :
1. Fluid dynamics.
2. Mathematical Statistical
3. Complex Analysis

4. Mechanics of Solids
5. Partial Differential Equation
6. Integral Equations

Publications:

1. **Poonam Redhu** and Vikash Siwach, An extended lattice model accounting for traffic jerk, Physica A, ISSN 0378-4371, 492, 1473-1480, 2015

2. **Poonam Redhu** and Arvind Kumar Gupta, The role of passing in a two-dimensional network Nonlinear Dynamics, ISSN 0924-090X, 86, 389-399, 2016, . **(Citation *4)* Impact factor 3**

3. **Poonam Redhu** and Arvind Kumar Gupta, Effect of forward looking sites on a multi-phase lattice hydrodynamic model, Physica A, ISSN 0378-4371, 445, 150-160, 2016. **(Citation *24)* Impact factor 1.785**

4. **Poonam Redhu** and Arvind Kumar Gupta, Delayed-feedback control in a lattice hydrodynamic model, Communications in Nonlinear Science and Numerical Simulation, ISSN 1007-5704, 27 (1), 263-270, 2015. **(Citation *35)* Impact factor 2.834**

5. **Poonam Redhu** and Arvind Kumar Gupta, Jamming transitions and the effect of interruption probability in a lattice traffic flow model with passing, Physica A, ISSN 0378-4371, 421, 249-260, 2015**. (Citation *33)* Impact factor 1.785**

6. Arvind Kumar Gupta, Sapna Sharma and **Poonam Redhu**. Effect of multi-phase optimal velocity function on jamming transition in a lattice hydrodynamic model with passing Nonlinear Dynamics, ISSN 0924-090X, 80 (3), 1091-1108, 2015. ***(Citation 32)* Impact factor 3**

7. **Poonam Redhu** and Arvind Kumar Gupta, Phase transition in a two-dimensional triangular flow with consideration of optimal current, Nonlinear Dynamics, ISSN 0924-090X, 78 (2), 957-968, 2014. (***Citation 18)* Impact factor 3**

8. Arvind Kumar Gupta and **Poonam Redhu** Analyses of the driver's anticipation effect in a new lattice hydrodynamic traffic flow model with passing , Nonlinear Dynamics, ISSN 0924-090X, 76 (2), 1001-1011, 2014. (***Citation 37)* Impact factor 3**

9. Arvind Kumar Gupta, Sapna Sharma and **Poonam Redhu**, Analyses of lattice traffic flow model on a gradient highway, Communications in Theoretical Physics, ISSN 0253-6102, 62 (3), 393, 2014. (***Citation 46)* Impact factor 0.948**

10. Arvind Kumar Gupta, and **Poonam Redhu**, Analysis of a modified two-lane lattice model by considering the density difference effect, Communications in Nonlinear Science and Numerical Simulation, ISSN 1007-5704, 19 (5), 1600-1610, 2014. (***Citation 59)* Impact factor 2.834**

11. Arvind Kumar Gupta, and **Poonam Redhu**, Jamming transition of a two-dimensional traffic dynamics with consideration of optimal current difference, Physics Letters A, ISSN 0375-9601, 377 (34), 2027-2033, 2013. (***Citation 34)* Impact factor 1.677**

12. Arvind Kumar Gupta, and **Poonam Redhu**, Analyses of driver's anticipation effect in sensing relative flux in a new lattice model for two-lane traffic system, Physica A, ISSN 0378-4371, 392 (22), 5622-5632, 2013. (***Citation 81)* Impact factor 1.785**

International and national Conferences and workshops:

1. Presented paper entitled "Analyses of individual anticipation driving behaviour in a modified two-lane lattice hydrodynamic model with density difference" at International conference on Mathematical modelling and Numerical Simulation held at BBAU, Lucknow, U.P., India on July 2-3, 2013.

2. Attended workshop on "Advances and Applications of Mathematical Modeling" being organized during 2-3 Feb, 2013 in DAV Institute of Engineering & Technology, Jalandhar.

3. Presented paper entitled "Analyses of backward-looking effect with multiple information of leading vehicles in a lattice model" at International congress of Mathematicians 2014 (ICM 2014), Seoul, South Korea, August 11-21, 2014.

4. Attended Conference "Knots and Low dimensional Manifolds", Bexco, Busan, South Korea, August 22-26, 2014.

5. Presented paper entitled "A new multi-phase hydrodynamic model considering the effect of driver's anticipation" at the International conference of Mathematical modeling and Computer simulation, IIT Madras, India, December 8-10, 2014.

6. Presented paper entitled "Multi-forward looking effect in lattice hydrodynamic traffic flow model" at the International Conference on Modelling, Simulation and Optimizing Techniques (ICMOST), DAV Jalandhar, Feb12-14, 2015.

7. Presented paper entitled "A lattice hydrodynamic traffic flow model for a two-dimensional network" at the international congress of applied and industrial mathematics, China national convention center, Beijing, China, August 10-14, 2015.

Academic Achievements:

- Qualified Dec 2010 CSIR-NET (junior research fellowship and National eligibility test) in Mathematics and Statistics with all India Rank: CSIR-JRF-98.
- Selected for financial support by ICIAM-2015, Beijing, China and CSIR, DST, and CICS, India.

Computing Skills:

• Working experience in PCs using MS-Windows, Linux operating systems
• Working experience in software MATLAB, MATHEMATICA
• Text processing using LATEX, MS-Word

Reviewer of The Journals:

1. Communications in Nonlinear Science and Numerical Simulation
2. Journal: Engineering Science and Technology, an International Journal
3. Transportmetrica B: Transport Dynamics
4. Journal of Computational Physics
5. Physica A: Statistical Mechanics and its Applications

Details:

- Date of Birth: November 24, 1987
- Sex: Female
- Marital status: Married
- Nationality: Indian

- **Permanent Address:**

Poonam Redhu W/o Vikash Siwach
H.No. 214, V.P.O. Mitathal
Dost. & Tesh. Bhiwani, Pin No. 127031

I hereby declare that the information furnished as above is true to the best of my knowledge and belief.

February, 2018 (Poonam Redhu)