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CURRICULUM VITAE

Said KOUACHI


Professor Emeritus of Mathematics


Contents

1. [Personal information](#)
2. [Education](#)
3. [Teaching and Supervision](#): [Teaching Experience](#)(Graduate teaching, Postgraduate teaching), [Supervision](#) (M. Sc. Advisor, Theses Supervision, Theses in preparation, Thesis Committees), [Courses Taught](#) (graduate Courses, postgraduate Courses) Short courses and workshops attended
4. **Research Work**: [Publications](#), Submitted Work, Works in preparation(books, papers), [Funded Projects](#), Conference Presentations, Conference Committees, Conference Attendance,
5. **Citations**: Reference Citations, Review Citations
6. [Refereeing](#).
7. **Visits and Seminars.**
8. **Committees.**
9. **Skills.**

1. Personal information

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Google Scholar: <https://scholar.google.com/citations?user=q79eN8sAAAAJ>

Google sites: <https://sites.google.com/univ-khenchela.dz/professor-said-kouachi>

Current appointments and affiliations:

- Professor Emeritus of Mathematics
- Director of the Laboratory of Mathematics and Artificial Intelligence (LMIA)
- Editor in Chief of Journal of Mathematics, Engineering and Computer Sciences (JMEC)

Major Field: Partial Differential Equations.

Area of research interest (Primary): Parabolic systems, Reaction Diffusion Systems, Attractors.

Area of research interest (Secondary): Algebra. Combinatory Analysis.

2. Education

2.1. Ph. D. Applied Mathematics, University of Paris VII, France, June 1985.

2.2. Qualification to Posts Of Associate Professors, Applied Mathematics, National Academic Commission, Section No 26, France, September 1994.

2.3. Ph. D., in Partial Differential Equations, University of Annaba, Algeria, June 1999.

2.4. M. Sc., Applied Mathematics, University of Paris VII, France, June 1982.

2.5. B. Sc., Functional Analysis, University of Constantine, Algeria, July 1981.

2.6. Baccalaureate Sciences by distance learning, Algeria, June 1979.

2.7. Baccalaureate, Maths, College Zinet, Aïn Beïda, Algeria, June 1977.

3. Teaching and Supervision

3.1. *Teaching Experience*

Undergraduate Teaching

- ✓ 04/2025-present: Professor Emeritus of Mathematics, University Abbes Laghrou

Khenchela, Algeria.

- ✓ 12/2020-04/2025: Professor, University Abbes Laghrour Khenchela, Algeria.
- ✓ 09/2008-08/2020: Visiting Professor, Qassim University, KSA.
- ✓ 12/2004-08/2008: Professor, University of Khenchela, Algeria.
- ✓ 06/2003-12/2004: Associate Professor, University Abbes Laghrour Khenchela, Algeria.
- ✓ 10/1999-06/2003: Associate Professor, University of Tebessa, Algeria.
- ✓ 10/1997-10/1999: Assistant Professor, University of Tebessa, Algeria.
- ✓ 09/1994-08/1996: Senior Lecturer Fateh University, Libya.
- ✓ 09/1991-09/1994: Senior Lecturer, University of Oum El Bouaghi, Algeria.
- ✓ 09/1988-09/1991: Senior Lecturer, University of Annaba, Algeria.
- ✓ 09/1985-09/1988: Lecturer, University of Annaba, Algeria.

Graduate Teaching

- ✓ 12/2020-present: Professor, University Abbes Laghrour Khenchela, Algeria.
- ✓ 10/2008- 08/2020: Visiting Professor: Qassim University, KSA.
- ✓ 07/2008: Visiting Professor: African University of Sc. & Tech., Abuja, Nigeria.
- ✓ 12/2010: Visiting Professor: University of Nancy, France (invited).
- ✓ 12/2008: Visiting Professor: University of Nancy, France (invited).
- ✓ 12/2007: Visiting Professor: University of Nancy, France (invited).
- ✓ 09/2006-06/2007: Visiting Professor, University of Tebessa, Algeria.
- ✓ 09/2000-06/2004: Visiting Professor, University of Annaba, Algeria.
- ✓ 09/2000-06/2001: Associate Professor, University of Tebessa, Algeria.
- ✓ 09/1999-06/2000: Visiting Professor, University of Laghouat, Algeria.
- ✓ 09/1992-06/1996: Visiting Professor, University of Annaba, Algeria.
- ✓ 09/1987-06/1988: Visiting Professor, University of Guelma, Algeria.

3.2 Supervision

3.2.1 Theses achieved

- ✓ Ph. D, University Abbes Laghrour Khenchela, Algeria, 05/07/2025.
- ✓ (01) Master, University Abbes Laghrour Khenchela, Algeria, 06/29/2023.
- ✓ (15) Masters, Qassim University, KSA, 2008-2020.
- ✓ Ph. D, University of Constantine, Algeria, 06/25/2008.
- ✓ Ph. D, University of Constantine, Algeria 04/07/2010.
- ✓ Ph. D, University of Annaba, Algeria, 01/25/2004.
- ✓ (04) Masters, University of Tebessa, Algeria, 06/29/2004, 06/29/2004, 10/23/2003, 05/23/2003.
- ✓ M. Sc., University of Constantine, Algeria, 05/28/2002.
- ✓ M. Sc., Higher College of Kouba, Algeria, 09/ 13/1999.
- ✓ M. Sc., University of Annaba, Algeria, 09/1993.

3.2.2 Thesis committees

- ✓ (03) Ph. D, University Abbes Laghrour Khenchela, February 2024.
- ✓ (01) Ph. D, University of Batna, Algeria, February 2024.
- ✓ (01) Ph. D, University of Tebessa, Algeria, June 2022.
- ✓ (01) Ph. D, University of Oum El-Bouaghi, Algeria, October 2022.
- ✓ (03) Ph. D, University of Khenchela, 2020-2022.
- ✓ (05) Master, Qassim University, KSA, April, 2020.
- ✓ (05) Master, Qassim University, KSA, April, 2019.
- ✓ (01) Master, Qassim University, KSA, December 7, 2018.
- ✓ (01) Master, Qassim University, KSA, April 26, 2018.
- ✓ (04) Masters, Qassim University, KSA, 06/2012.
- ✓ (06) Masters, Qassim University, KSA, 02/2012.
- ✓ (06) Masters, Qassim University, KSA, 06/2011.
- ✓ (06) Masters, Qassim University, KSA, 02/2011.
- ✓ (03) Masters, Qassim University, KSA, 06/2010.
- ✓ (02) Masters, Qassim University, KSA, 02/2010.
- ✓ (02) Masters, Qassim University, KSA, 06/23/2009.
- ✓ (03) Masters, Qassim University, KSA, 02/09/2009.
- ✓ Ph. D., University of Constantine, Algeria, 22/01/2008.
- ✓ (02) Ph. D., University of Annaba, Algeria, 09/2006, 10/18/2000.
- ✓ Ph. D., Higher College of Kouba, Algeria, 10/2004.
- ✓ Ph. D., USTHB. Alger, Algeria, 09/15/2004.
- ✓ Ph. D., University of Constantine, Algeria, 09/17/2000.
- ✓ (03) Masters, University of Laghouat, Algeria, 06/27/2001.
- ✓ (03) Masters University of Annaba, Algeria, 06/2004, 06/2003, 05/09/2000.
- ✓ (03) Masters, University of Tebessa, Algeria, 09/2003.
- ✓ M. Sc., University of OEB, Algeria, 09/2003.

3.3. ***Courses taught, Short courses and workshops attend.***

3.3.1. ***Undergraduate Courses***

- ✓ 02/2025-present: Applied Mathematics, University Abbes Laghrour Khenchela, Algeria.
- ✓ 09/2021-02/2025: Analysis, University Abbes Laghrour Khenchela, Algeria.
- ✓ 12/2020-07/2021 : Analysis, Ecole Nationale Supérieure des Forêts, Alegria.
- ✓ 2009-08/2020: Analysis 1, Differential Geometry, Algebra (Rings, Ideals and Fields), Qassim University, KSA.
- ✓ 2008- 2010: Analysis 1, Diff. Equations, Algebra (Rings, Ideals and Fields), Qassim University, KSA.

- ✓ 2003-2008: Analysis 1, Analysis 2, Linear Algebra, Diff. Equations, University of Khenchela, Algeria.
- ✓ 1997-2003: Analysis 1, Analysis 2, Linear Algebra, Differential Equations, Numerical Analysis, Numerical Methods, Sobolev Spaces, University of Tebessa, Algeria.
- ✓ 1994-1996: Analysis 1, Analysis 2, Linear Algebra, Differential Equations, Fluid Mechanics, Continuous Mechanics, Feteh University, Libya.
- ✓ 1991-1994: Analysis 1, Analysis 2, Linear Algebra, Differential Equations, University of OEB, Algeria.
- ✓ 1989-1991: Calculus, Numerical Analysis, University of Annaba, Algeria.
- ✓ 1987-1989: Diff. Equations, Linear Algebra, Complex Analysis, University of Annaba, Algeria.
- ✓ 1985-1987: Infinite Series in Banach spaces, integration, University of Annaba, Algeria.

3.3.2. Graduate Courses.

- ✓ 2024-2025: Semi groups on Banach Spaces (PDE's), University Abbes Laghrour Khenchela, Algeria.
- ✓ 2021-2022: Reaction Diffusion Systems (PDE's), University Abbes Laghrour Khenchela, Algeria.
- ✓ 2008-2020: Algebra (Modules, Rings, Ideals and Fields), Abstract Algebra, Qassim University, KSA.
- ✓ 2018-present: Partial differential Equations (Theory and Applications) Qassim University, KSA.
- ✓ 2018-present: Stability Theory, Qassim University, KSA.
- ✓ 2017-present: Ordinary differential Equations (Theory and Applications) Qassim University, KSA.
- ✓ 2010-2011: Ordinary differential Equations (Theory) Qassim University, KSA.
- ✓ 2006-2007: Numerical Analysis, Numerical Methods, University of Tebessa, Algeria.
- ✓ 2000-2001: Reaction Diffusion Systems (PDE's), University of Tebessa, Algeria.
- ✓ 2002-2003: PDE's of parabolic type, University of Annaba, Algeria.
- ✓ 2000-2004: Reaction Diffusion Systems (PDE's), University of Annaba, Algeria.
- ✓ 1996-1997: PDE's, University of Lagouat, Algeria.
- ✓ 1992-1993: PDE's, University of Annaba, Algeria.

3.2. workshops attend.

May 06, 2012, Strategic Plan for the Management of Scientific Publishing and Translation, Qassim University, KSA.

4. Research and work

4.1. Publications

1. D. Sateeshkrishna, **S. Kouachi** and S. Werner, Optimal Analysis of Consensus Algorithms for r-nearest Ring Network, to appear in IEEE Signal Processing Letters, (2025).
2. S. Dhuli, **S. Kouachi**, A. K. Sah and S. Werner, Analysis of Exponential Correlation Matrices for Massive MIMO Systems, IEEE Communications Letters, doi: 10.1109/LCOMM.2025.3561089, (2025).
3. I. Nasrallah, R. Aouafi and **S. Kouachi**, Four Different Ulam-Type Stability for Implicit Second-Order Fractional Integro-Differential Equation with M-Point Boundary Conditions, Mathematics (2025), 13, 157.
4. S. Kundu, **S. Kouachi**, S. Kumar and N. Kumari, Pattern formation and stability analysis in a delayed epidemic model with two aware classes, Eur. Phys. J. Plus (2024) 139:1079.
5. **S. Kouachi**, The Cauchy interlace theorem for symmetrizable matrices, Journal of Mathematics, Engineering and Computer Sciences (JMECS). 01, No. 01, pp. 33-38, July (2024).
6. R. Aouafi, A. Zaidi, **S. Kouachi** and R. D. Parshad, A remark on “Dynamical behaviour of a fractional three-species food chain model” [Nonlinear Dynamics, 95, February 2019]. Nonlinear Dyn. **111**, 13641–13651 (2023).
7. **S. Kouachi** and A. Zaidi, Blow Up In Finite Time Of Solutions To A Leslie-Gower Predator-Prey Model In Absence Of The Middle Predator, Preprint from **Authorea Preprints**, 06 Jun (2022).
8. S. Kundu, N. Kumari, **S. Kouachi** and P. Kundu, Stability and bifurcation analysis of a heroin model with diffusion, delay and nonlinear incidence rate. Model Earth Syst. Environ. **8**, 1351-1362 (2021).
9. D. Sateeshkrishna, **S. Kouachi**, A. Chhabra and Y. N. Singh, Network Robustness Analysis for IoT Networks using Regular Graphs, IEEE Internet of Things Journal **9** (11) (2021).
10. E. M. Takyi, K. A. Fordjour, **S. Kouachi** and R. D. Parshad, A remark on “Global dynamics of a tritrophic food chain model subject to the Allee effects in the prey population with sexually reproductive generalized-type top predator” [Comp and math Methods. 2019, E1079, pp 1-23] Computational and Mathematical Methods, First published: 15 March (2021).
11. K. P. Das and **S. Kouachi**, Effect of boundary conditions in controlling chaos in a tri-trophic food chain with density dependent mortality in inter-mediate predator, Nonlinear studies, Vol. 28, No. 1, pp. 1-27, (2021).
12. **S. Kouachi**, S. Dhuli and Y. N. Singh, "Convergence Rate Analysis of Periodic Gossip Algorithms for One-Dimensional Lattice WSNs," in IEEE Sensors Journal, vol. 20, no. 21, pp. 13150-13160, 1 Nov.1, (2020).

13. R. D. Parshad, E. M. Takyi and **S. Kouachi**, A remark on “Study of a Leslie-Gower predator-prey model with prey defense and mutual interference of predators” [Chaos, Solitons & Fractals 120 (2019) 1–16], Chaos, Solitons and Fractals 123, 201–205 (2019).
14. R. D. Parshad, **S. Kouachi** and Jingjing Lyu, Global Dynamics of a PDE Model for Eradication of Invasive Species, International Journal of Innovative Science and Research Technology Volume 4, Issue 4, April – (2019).
15. Yan He, Kevin Wright, **S. Kouachi** and Chih-Chun Chien, Topology, edge states, and zero-energy states of ultracold atoms in one-dimensional optical superlattices with alternating on-site potentials or hopping coefficients, Physical Review A 97, 023618 (2018).
16. Chih-Chun Chien, **S. Kouachi**, K. A. Velizhanin, Y. Dubi, and M. Zwolak, Thermal transport in dimerized harmonic lattices: Exact solution, crossover behavior, and extended reservoirs, Phys. Rev. E 95, 012137 – Published 23 January (2017).
17. R. D. Parshad, E. Quansah, M. A. Beauregard and **S. Kouachi**, On “small” data blow-up in a three species food chain model, Computers and Mathematics with Applications 73 pp. 576–587(2017).
18. R. D. Parshad, **S. Kouachi**, N. Kumari and H. Ait Abderrahmane, Global Existence and Long Time Dynamics of a Four Compartment Brusselator Type, Dynamics of Continuous, Discrete and Impulsive Systems, Series A: Mathematical Analysis 24, 79–120 (2017).
19. R. D. Parshad, **S. Kouachi** and N. Kumari, A comment on “Mathematical study of a Leslie-Gower type tritrophic population model in a polluted environment” [Modeling in Earth Systems and Environment 2 (2016) 1–11] Model. Earth Syst. Environ. (2016) 2:93.
20. **S. Kouachi**, Explicit Eigenvalues of some perturbed heptadiagonal Matrices via recurrent sequences, Lobachevski Journal of Mathematics, Vol. 36, issue 1, pp 28–37(2015).
21. C. M. da Fonseca, **S. Kouachi**, D. A. Mazilu and I. Mazilu, A Multi-Temperature Kinetic Ising Model and the Eigenvalues of Some Perturbed Jacobi Matrices, Applied Mathematics and Computation 259, 205–211(2015).
22. R. D. Parshad, N. Kumari and **S. Kouachi**, A remark on “Study of a Leslie-Gower-type tritrophic population model” [Chaos, Solitons & Fractals 14 (2002) 1275–1293], Chaos, Solitons and Fractals 71 (2015) 22–28.
23. **S. Kouachi**, Global Existence and Boundedness of Solutions for the General Activator-Inhibitor Model, Matematicki Vesnik, Vol. 66, issue 3, pp. 274–282 (2014).
24. **S. Kouachi**, K. E. Yong and R. D. Parshad, Global existence for a strongly coupled reaction diffusion system, [1404.5984](#)
25. R. D. Parshad, **S. Kouachi** and J. B. Gutierrez, Global existence and asymptotic behavior of a model for biological control of invasive species via supermale introduction, Communications in Mathematical Sciences, Vol. 11, No. 4, pp. 951–972 (2013).
26. **S. Kouachi** and E. M. Al-Eid, Explicit invariant regions and global existence of solutions for reaction-diffusion systems with a full matrix of diffusion coefficients and no homogeneous boundary conditions, Int. J. Open Problems Comput. Math. , Vol. 5, No. 1, March, (2012), pp. 16–29.

27. **S. Kouachi**, Global existence for coupled reaction diffusion systems modeling some reversible chemical reactions, *Dynamics of Partial Differential Equations*, Volume 8, Number 2 (June 2011), p. 79-88.
28. **S. Kouachi**, Global existence for reaction diffusion systems without nonlinearities growth condition, *Mathematical Methods in the Applied Sciences*, volume 34, issue 7(2010), pp. 798-802.
29. **S. Kouachi** and B. Rebaï, Invariant Regions and the Global Existence for Reaction Diffusion Systems with a Tridiagonal Matrix of Diffusion Coefficients, *Memoirs on Differential Equations and Mathematical Physics*, Volume 51 (2010), 93-108.
30. **S. Kouachi**, Explicit Eigenvalues of Several Perturbed Pentadiagonal Matrices, Accepted for publication in *International Journal of Pure and Applied Mathematics*.
31. **S. Kouachi**, Eigenvalues and Eigenvectors of Some Tridiagonal Matrices with non constant diagonal entries, *Appl. Math. (Warsaw)* 35 (2008), 107-120.
32. S. Abdelmalek and **S. Kouachi**, A Simple Proof of Sylvester's (Determinants) Identity, *Applied Mathematical Sciences*, Vol. 2, 2008, no. 32, 1571 - 1580
33. **S. Kouachi**, S. Abdelmalek and B. Rebaï, Existence of Global Solutions to Reaction Diffusion Systems via a Lyapunov functional, accepted for publication in *Archivum Mathematicum*.
34. **S. Kouachi**, S. Abdelmalek and B. Rebaï, A mathematical proof of Dodgson's algorithm, arXiv: 0712.0362v1 [math.CO] 3 Dec 2007.
35. S. Abdelmalek and **S. Kouachi**, Condensation of determinants, arXiv: 0712.0822v1 [math.CO] 5 Dec 2007.
36. S. Abdelmalek and **S. Kouachi**, Proof of Existence of Global Solutions for m-Components Reaction Diffusion Systems with Mixed Boundary Conditions via the Lyapunov Functional Method, *J. Phys. A: Math. Theory.* 40 (2007) 12335-12350.
37. **S. Kouachi**, Eigenvalues and Eigenvectors of Tridiagonal matrices, *Electronic Journal of linear Algebra*, Vol. 15 (April 2006) pp. 115-133.
38. **S. Kouachi**, Invariant regions and global existence of solutions for reaction diffusion systems with a full matrix of diffusion coefficients and no homogeneous boundary conditions, *Georgian math. Jour.*, Vol. 11(2004), Number 2, pp 349-359.
39. **S. Kouachi**, Global existence of solutions in invariant regions for reaction diffusion systems with a balance law and a full matrix of diffusion coefficients, *E. J. Qual. Theory Diff. Equ.*, No. 4. (2003), 1-10.
40. **S. Kouachi**, Existence of global solutions to reaction diffusion systems with no homogeneous boundary conditions via a Lyapunov functional. *Electron. J. Diff. Eqns* Vol. 2002(2002), No. 88, pp. 1-13.
41. **S. Kouachi**, Global existence of solutions for reaction diffusion systems with a full matrix of diffusion coefficients and no homogeneous boundary conditions. *E. J. Qual. Theory Diff. Equ.* No.2 (2002), 1-10.

42. **S. Kouachi**, Uniform boundedness and global existence of solutions for reaction diffusion systems with a balance law and a full matrix of diffusion coefficients, E. J. Qual. Theory Diff. Equ., No. 7. (2001), 1-9.
43. **S. Kouachi**, Global existence of solutions to reaction diffusion systems via a Lyapunov functional. E. J. Diff. Eq. Vol. 2001(2001), No. 68, 1-10.
44. **S. Kouachi** and A. Youkana, Global existence and asymptotics for a class of reaction diffusion systems. Bul. Polish Academy Sc. V. 49, N° 3 (2001).
45. M. Kirane and **S. Kouachi**, Global solutions to a system of strongly coupled reaction-diffusion equations. Nonlinear Analysis Theory, Methods and Applications. Volume 26, number 8 (1996).
46. M. Kirane, **S. Kouachi** and N. Tatar, Nonexistence of global solutions to some quasi-linear hyperbolic equations with dynamic boundary conditions. Math-Nachr 176 (1995).
47. M. Kirane and **S. Kouachi**, A strongly nonlinear reaction diffusion model for a deterministic diffusive epidemic. Japan Journal of Industrial and Applied Mathematics. Volume 12, number 1, February 1995.
48. M. Kirane and **S. Kouachi**, Asymptotic behavior of a nonlinear model for the geographic diffusion of infectious diseases. Qualitative aspects and applications of nonlinear evolution equations (Trieste, 1993), 163-167, World Sci. Publishing, River Edge, NJ, 1994.
49. M. Guedda, M. Kirane and **S. Kouachi**, Global smooth solutions to a coupled nonlinear wave equations. Preprint LAMIFA 94/01, Amiens, January 1994.
50. M. Kirane and **S. Kouachi**, Asymptotic Behavior for a system describing epidemics with migration and spatial spread of infection. Dynamic Systems and Applications. Volume 2, number 1, March 1993. pp. 121-131.

4.2. Submitted work

1. S. Godara, S. Kundu, **S. Kouachi** and N. Kumari, Stability analysis and optimal control of a delayed epidemic model with two aware classes, submitted to European Journal of Mathematics.
2. **S. Kouachi**, A balance law for some strongly coupled reaction-diffusion systems and an invariance, submitted to Electronic Journal of Qualitative Theory of Differential Equations.
3. **S. Kouachi**, Global Existence for Reaction Diffusion Systems with Unlimited Reaction Growth, submitted to Journal of Physics A.
4. **S. Kouachi**, A Lyapunov Functional Giving Global Existence For Reaction Diffusion Systems With Unlimited Growth, submitted to Kyungpook Mathematical Journal.
5. **S. Kouachi**, Effect of the Cross Diffusions on the Global Existence of Solutions of Reaction Diffusion Systems, submitted to Electronic Journal of Differential Equations.
6. **S. Kouachi**, Global Existence for Reaction Diffusion Systems with Reactions Changing Sign, submitted to Ural Mathematical Journal.
7. **S. Kouachi**, Explicit Eigenvalues of several perturbed pentadiagonal Matrices via recurrent sequences, submitted to Mathematica Pannonica.

4.3. *Works in preparation*

Books (in preparation)

1. S. Kouachi, Differential Geometry (undergraduate)
2. S. Kouachi, Numerical Analysis (undergraduate)
3. S. Kouachi, Rings and Fields (undergraduate).
4. S. Kouachi, On reaction diffusion systems (Graduate) to appear in OPU (2025)

Papers

1. Dhuli, Sateeshkrishna and S. Kouachi “On the Eigenvalues and eigenvectors of the correlation matrices”.
2. Dhuli, Sateeshkrishna and S. Kouachi “On the Eigenvalues and eigenvectors of the Torus”.
3. S. Kouachi, Eigenvalues and eigenvectors of multidiagonal matrices.

4.4. *Funded Projects*

1. 2021-2025, Effects of diffusion in controlling chaos in some tri-trophic food chains. University of Khenchela, Algeria, Code: C00L03UN400120220001.
2. 2017-2019: A Novel Control for Eradication of Invasive Species: Mathematical Modeling, Analysis and Experiments. , Qassim University, KSA, achieved, Code: cos-2016-1-12-I-1327.
3. 2015-2016: Existence and Asymptotic of Solutions to fourth components system describing Some Chemical Reactions. Number 3388, , Qassim University, KSA, achieved.
4. 2010-2011: Applied mathematics to environment in Saudi Arabia, Qassim University, KSA, achieved.
5. 2006-2007: Partial Differential Equations and applications, University of Batna, Algeria.
6. 2006-2007: Existence and nonexistence of solutions for Partial Differential nonlinear systems, University of Annaba, Algeria.
7. 2005-2006: Minerals, University of Tebessa, Algeria.
8. 2005-2007: Partial Differential Equations and Statistics University of Annaba, Algeria.
9. 2002-2005, Partial Differential Equations, University of Annaba, Algeria.
10. 2000-2003: Applied mathematics to environment, National Agency of Development Research, Algeria.
11. 1998-2001: Theory of the biologic disaster, University of Tebessa, Algeria.

12. 2000-2003: Global existence of solutions to reaction-diffusion systems with a full matrix of diffusion, University of Tebessa, Algeria.
13. 2000-2003: Invariant regions to reaction diffusion systems with a full matrix of diffusion, University of Tebessa, Algeria.

4.5. Conferences presentations

1. 19-29 June, 2024, conference titled “Comments on the problem of global existence of solutions to reaction diffusion systems describing some ecological and dynamical systems” in the Workshop on “Recent Development of Mathematical Sciences on Biological and Dynamical Systems with Fuzzy and Fractional Environments”, organized by the Department of Mathematics, Mahadevananda Mahavidyalaya, India.
2. 07-13 February, 2024; Speaker in Recent Trend in Biomathematics and Dynamical System, Bifurcation, Chaos and Numerical Methods (via Google Meet). Organized by department of mathematics mahadevananda mahavidyalayabarrackpur, kolkata -120 India.
3. 18-19 December 2023, Speaker in: Study days on Mathematics and Computer (SDMC’2023; On the applications of the Reaction Diffusion Systems to biology, chemistry, physics... Organized by department of mathematics-Informatics, University Abbes Laghrour Khenchela, Algeria.
4. 12 May 2022, Speaker in: Study Day in Mathematics “Recent Research in Applied Mathematics”. Tebessa University. 10/2021, S. Kouachi, Applications of the reaction-diffusion systems, Department of mathematics and Informatics, Sciences and Technology College, Khenchela University, Algeria.
5. S. Kouachi, On reaction-diffusion systems, 05/2016, Department of mathematics, Sciences College, Qassim University, KSA.
6. S. Kouachi, On reaction-diffusion systems, 05/2015, Department of mathematics, Sciences college, Qassim University, KSA.
7. S. Kouachi, On reaction-diffusion systems, 02/2013, Department of mathematics, Sciences college, Qassim University, KSA.
8. S. Kouachi, On reaction-diffusion systems, 02/2010, Department of mathematics, Sciences college, Qassim University, KSA.
9. S. Kouachi, On Epidemic propagation, 02/2009, Sciences college, Qassim University, KSA.
10. S. Kouachi, Invariant regions and global existence of solutions for tripled reaction-diffusion equations with a full matrix of diffusion coefficients and no homogeneous boundary conditions, The Third International Conference on Mathematical Sciences- ICM 2008, March 3-6, 2008, Al Ain, UAE. [ICM 2008](#) (invited)
11. S. Kouachi, Global existence for a tripled reaction diffusion system with a full matrix of diffusions. International conference on differential equations, Equadiff 2003, Hasselt- Belgium, July 22-26, 2003. [Pdf](#) (invited)
12. S. Kouachi, Global existence for reaction diffusion systems with a full matrix of diffusions and no homogeneous boundary conditions, workshop on differential equations and applications, University of Annaba, Algeria, October 14-15, 2002.

13. S. Kouachi, Global existence and asymptotic behavior of solutions for a class of reaction diffusion systems, First SIAM–EMS Conference "AMCW" 2001, September 2 – 6, 2001, Berlin. [pdf](#) (invited)
14. S. Kouachi, polynomial functional giving L_p -bounds and global existence for solutions of reaction-diffusion systems, Czechoslovak International Conference on Differential Equations and Their Applications, EQUADIFF 10, Prague, Czech Republic, August 27–31, 2001 (invited).
15. S. Kouachi, Global existence of solutions to reaction diffusion systems, International colloque of mathematics, University of Houari boumediene, Algeria, May 21-24, 2000 Algeria.
16. S. Kouachi, Global existence and asymptotic for a class of reaction diffusion systems, national colloque of mathematics, University of Tebessa, Algeria, may 7-9, 2000.

4.6. Conferences Committees

1. September 21-22, 2021, chairing one of the sessions in the IEEE International Conference on Recent Advances in Mathematics and Informatics (ICRAMI'2021), University of Tebessa, Algeria.
2. May 05-06, 2002: Mathematical Methods and Didactics, Chairman scientific committee & member of the Organizing committee, University of Tebessa, Algeria.
3. May 07-09, 1999: Math. National Symposium, chairman Scientific Committee & member of the Organizing Committee, University of Tebessa, Algeria.

4.7. Conference attendance

1. 19-29 June, 2024, Workshop on “Recent Development of Mathematical Sciences on Biological and Dynamical Systems with Fuzzy and Fractional Environments”, Department of Mathematics, Mahadevananda, India.
2. 07-13 February, 2024; Recent Trend in Biomathematics and Dynamical System, Bifurcation, Chaos and Numerical Methods (via Google Meet), department of mathematics mahadevananda, kolkata -120 India.
3. 18-19 December 2023, Study days on Mathematics and Computer (SDMC'2023); department of mathematics-Informatics, University Abbes Laghrour Khenchela, Algeria.
4. 12 May 2022, Study Day in Mathematics ‘Recent Research in Applied Mathematics’. Tebessa University.
5. November 19-21, 2007: International Conference on nonlinear analysis, University of Setif, Algeria.
6. November, 3-5, 2007: International Conference on PDE & Applications, University of Guelma, Algeria.
7. May 8-10, 2006: Second international Conference on Electrical Systems, Electrical Engineering, University of OEB, Algeria.
8. May 13-18, 2006: Workshop on EDA/EDO, Tipaza, Algeria.

5. Refereeing, Editorial Board and Evaluator

5.1. Editorial Board

- Editor in chief, Journal of Mathematics, Engineering and Computer, university of Khenchela (to appear).
- International Journal of open Problems in Computer Science and Mathematics.
- International Journal of Mathematical Sciences and Engineering Applications.
- International Multi-Conference on engineering and Technological Innovation.
- Journal of Natural Sciences and Mathematics, KSA.
- JP Journal of Algebra, Number Theory and Applications.

5.2. Refereeing

- Evolution Equations and Control Theory Miskolc Mathematical Notes
- Acta Mathematica Scientia
- Applied Mathematics and Computers.
- Acta Applicanda Mathematicae.
- American Mathematical Society (Mathematical Reviews).
- Computers and Mathematics with Applications.
- Communications in Pure and Applied Analysis.
- Electronic Journal of Qualitative Theory of Differential Equations.
- Electronic Journal of Differential Equations.
- Journal of applied mathematics.
- International Journal of Biomathematics
- Linear Algebra and Applications.
- Premier Publishers Journal.
- Special Matrices journal.
- The European Physical Journal Plus

5.3. Evaluator

- 2021-present: Expert/Habilitation for the Algerian Scientific Research Education Ministry (MESRS).
- 05/2018: Evaluator for academic promotion to the rank of associate professor in **Northern Border** University, KSA.
- 05/2017: Evaluator for academic promotion to the rank of associate professor in **Jazan** University, KSA.
- 11/2017: Evaluator for mathematics project of Al **Majmaah** University, KSA.
- 07/2014: Evaluator for academic promotion to the rank of associate professor in **Mu'tah** University, Jordan.
- Evaluator for books in Qassim University.

7.4 Builder

- May 2022, Builder of the Doctorate program in Applied Mathematics, University of Khenchela, Algeria.

- 2018: Editor-in-chief and Builder of Applied mathematics master program in the Mathematics Department, Sciences College, Qassim University, KSA.
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6. Visits/ Seminars

6.1. Some Seminars

- March 2022, Seminar On Reaction Diffusion systems, Laboratoire System Dynamics and Control Laboratory, University of Oum El Bouaghi.
- S. Kouachi, June 08, 2023, Global existence of solutions of reaction-diffusion systems, Department of mathematics and Informatics, Sciences and Technology College, Tebessa University, Algeria.
- S. Kouachi, Applications of the reaction-diffusion systems, 10/2021, Department of mathematics and Informatics, Sciences and Technology College, Khenchela University, Algeria.
- Chair of a session of the IEEE international conference on recent advances in mathematics and Informatics (icrami'2021), September 21-22, 2021, Tebessa University, Algeria.
- 06/2014: Reaction Diffusion systems with full Diffusion Matrices, Open day on Analysis and PDE , Sciences College, Qassim University, KSA.
- 03/2009: On Reaction Diffusion systems, Physics Department, Sciences College, Qassim University, KSA.
- 05/2009: Global Existence of Reaction Diffusion systems, Mathematics Department, Sciences College, Qassim University, KSA.
- 09/2001: Global solutions to reaction diffusion systems, University of Tebessa, Algeria.
- 10/2000: Polynomial Lyapunov Functional giving global existence of solutions to reaction diffusion systems, USTHB, Algeria.
- 09/ 1999: On reaction diffusion systems, ENS. Kouba, Algeria.

6.2. Some Visits

- 06/2003: University of Paris Sud, Paris, France.
 - 12/2002: University Cath. Louvain, Bruxelles, Belgium.
 - 10/1995: Faculty of Sciences, Al Ain, EUA.
 - 03/1989 & 09/1990: University of Paris 7, Paris, France.
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7. Committees

- 2022-2024: President of the scientific committee of the department of mathematics and informatics, Abbes Laghrour University of Khenchela, Algeria.
- 2022-2024: Member of the Deontology Committee of Abbes Laghrour University of Khenchela, Algeria.

- 12/2020-present: President of the Follow-up Committee for Mobility and Cooperation Programs between Abbes Laghrour University and International Institutions.
 - 2012-2014: Member of the Research Centre, Sciences College, Qassim University, KSA.
 - 2011-2013: Representative of Sciences College's graduate studies, Qassim University, KSA.
 - 2010-2012: Responsible of the graduation, Mathematics Department, Sciences College, Qassim University, KSA.
 - 1999-2002 & 2005-2008: Expert of the National Agency of Development and University Research (ANDRU).
 - 10/2008-present: Member of Scientific Committee, Mathematics Department, Sciences College, Qassim University, KSA.
 - First semester 2008, President of the fundamental courses Committee, Mathematics Department, Sciences College, Qassim University, KSA.
 - 10/2008-present: Algebraic Committee President, Mathematics Department, Sciences College, Qassim University, KSA.
 - 10/2008-present: : Member of the Differential Equations, Postgraduate Studies and cultural Committees, Mathematics Department, Sciences college, Qassim University, KSA.
 - 2003-present: Scientific Committee, Sciences Institute, University of Khenchela (chairman).
 - 2000-2003: Member of the Scientific Committee, Sciences Institute, University of Tebessa.
 - 2000-2003: Scientific Committee, Mathematics Department, University of Tebessa (chairman).
 - 1999-2003: Permanent member of the mathematical national educational committee, Algeria.
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8. Skills

a. Computer

Word, Excell, Swp, Latex, Maple, Mathematica, Matlab

b. Foreign Languages

Arabic, English, French.