Boushra Rajab Abbas, Ph.D.

Associate Professor of Mathematics

Latakia, Syria | +963 934 789 808

boushraabbas@latakia-univ.edu.sy | abbas.boushra@yahoo.com

ORCID · ResearchGate · Google Scholar

RESEARCH INTERESTS

Optimization Theory and Numerical Methods; Monotone Inclusions and Variational Inequalities; Dynamical Systems and Optimization Algorithms; Newton-Type Methods; Convex and Nonconvex Optimization; Hilbert Space Methods; Applications to Machine Learning.

PROFESSIONAL SUMMARY

Associate Professor of Mathematics with a Ph.D. in Fundamental and Applied Mathematics from the University of Montpellier, France (supervisor: Prof. Hédy Attouch). Active researcher in optimization, monotone operator theory, and dynamical systems, with peer-reviewed publications in internationally recognized journals including *Optimization*, *Journal of Optimization Theory and Applications*, and Wiley journals. Experienced in university teaching across mathematics, engineering, pharmacy, and business programs, and in supervising Master's and Ph.D. students. Member of the American Mathematical Society (AMS). Trilingual: Arabic, English, and French. Open to research fellowships and collaborative research opportunities worldwide.

EDUCATION

Ph.D. in Fundamental and Applied Mathematics, University of Montpellier, France **2015**
Thesis: "Newton-Like Methods for Structured Monotone Inclusions: Study of the Associated Dynamics and Algorithms."
Supervisor: Prof. Dr. Hédy Attouch.

Master's in Applied Mathematics, University of Montpellier, France **2011**

Bachelor's in Mathematics (with Honors), Latakia University (formerly Tishreen University), Syria **2008**

Baccalaureate in Sciences, Bilal Makkiah School, Latakia, Syria **2004**

ACADEMIC POSITIONS

Associate Professor of Mathematics, Department of Mathematics, Faculty of Sciences, Latakia University, Syria **2016–Present**

Associate Professor of Mathematics, Al Manara University, Syria **2017–Present**

Teaching Assistant, Department of Mathematics, Latakia University, Syria **2009–2010**

ACADEMIC SERVICE

Member of the Department Council, Department of Mathematics, Latakia University, Syria **2017–2018 & 2025–2026**

PROFESSIONAL SERVICE & REVIEWER ACTIVITIES

Mathematical Reviewer, MathSciNet / American Mathematical Society **May 2026–Present**

Reviewer, Scientific Journals of Syrian Public Universities **2016–Present**

COURSES TAUGHT

Core Mathematics:
Real Analysis, Convex Analysis, Calculus of Variations, Optimization Theory, Complex Analysis, Linear

Algebra & Matrix Theory, Differential Equations, Analytic Geometry, Probability.

Applied Mathematics and Service Courses:
Calculus I–III (Mechatronics, Civil Engineering, Informatics), Biostatistics (Pharmacy), Business Mathematics (Business), Linear Algebra & Matrix Theory (Robotics, Informatics), Differential Equations (Mechatronics, Informatics), Analytic Geometry & Probability (Geology).

SUPERVISION & RESEARCH EXPERIENCE

Ph.D. Supervisor, Latakia University **2016–Present**

Master's Supervisor, Latakia University **2016–Present**

Doctoral Researcher, University of Montpellier, France **2011–2015**

PUBLICATIONS

International Journal Publications

Abbas, B. (2026). A generalized topology approach to trajectory convergence in nonautonomous evolution equations with monotone operators. *Abstract and Applied Analysis* (Wiley).

Abbas, B. (2025). Advanced Stability Analysis of Regularized Newton Methods for Monotone Inclusions With Bounded Variation. *Journal of Applied Mathematics*, 2025(1), 1–12. DOI: 10.1155/jama/6663632

Abbas, B. (2020). An Asymptotic Viscosity Selection Result for the Regularized Newton Dynamic. *Journal of Nonlinear and Convex Analysis*, 20(1), 53–72.

Abbas, B., & Attouch, H. (2014). Dynamical Systems and Forward-Backward Algorithms Associated with the Sum of a Convex Subdifferential and a Monotone Cocoercive Operator. *Optimization*. DOI: 10.1080/02331934.2014.971412

Abbas, B., Attouch, H., & Svaiter, B. F. (2014). Newton-Like Dynamics and Forward-Backward Methods for Structured Monotone Inclusions in Hilbert Spaces. *Journal of Optimization Theory and Applications*, 161(2), 331–360. DOI: 10.1007/s10957-013-0414-5

Regional Journal Publications

Abbas, B., & Alcheikh, M. (2026). Best Proximity Pairs in Busemann Convex Spaces with Generalized Pointwise Contractions. *Homs University Journal*.

Abbas, B., & Al-Sheikh, M. A. (2026). Continuous and Discrete Newton Methods for Monotone Inclusions: Stability under General Regularization Coefficients. *Aleppo University Research Journal*.

Abbas, B. (2026). Enhancing Nonconvex Optimization in AI: Extensions of Unbounded Damping Dynamical Systems with Practical Applications. *Aleppo University Research Journal*.

Abbas, B., Ali Hassan, N., & Khaddour, G. (2026). Regularized Newton versus Nesterov Accelerated Gradient: Convergence, Stability, and Adaptive Switching Scheme. *Homs University Journal*.

Abbas, B. (2026). Accelerated Inertial Proximal Algorithms with Hessian-Driven Dynamics for Structured Convex Optimization. *Tartous University Journal*.

Abbas, B. (2025). Existence, Uniqueness, and Convergence of Solutions for General Monotone Inclusions in Hilbert Spaces. *Homs University Journal*.

Abbas, B. (2025). Discrete Forward-Backward Algorithms in Optimization: Advances and Applications. *Hama University Journal*.

Abbas, B. (2024). Study of Dynamical Systems in Hilbert Spaces and Their Applications Related to Maximal Monotone and Cocoercive Operators. *Journal of Tartous University*.

Abbas, B. (2024). Dynamical Systems Associated with the Sum of a Gradient Operator and a Monotone Contraction Operator. *Homs University Journal*.

Abbas, B., & Ghazaleh, A. (2022). Regularized Newton Method for Solving Some Nonconvex Optimizations. *Tartous University Journal – Basic Sciences*.

Soueycatt, M., Abbas, B., & Ali, L. (2019). Strong Convergence of Tikhonov Regularization Method of Solving Ill-Posed Problems in Hilbert Spaces. *Tishreen University Journal – Basic Sciences Series*, 41(1).

Soueycatt, M., Abbas, B., & Ali, L. (2017). Strong Convergence of Proximal Alternating Direction Method of Multipliers in Real Hilbert Spaces. *Tishreen University Journal – Basic Sciences*.

Preprints

Abbas, B. (2015). Stability of a Regularized Newton Method with Two Potentials. *arXiv preprint arXiv:1505.05418*. https://arxiv.org/abs/1505.05418

Ph.D. Thesis

Abbas, B. (2015). Newton-Like Methods for Structured Monotone Inclusions: Study of the Associated Dynamics and Algorithms [Ph.D. Thesis]. Université de Montpellier, France.

BOOKS

Abbas, B. (2022). *Analysis 1*. Latakia University (formerly Tishreen University) Publications.

CONFERENCE PRESENTATIONS

Conference in Mathematics, Latakia University, Syria	**2026**
Conference in Mathematics, Latakia University, Syria	**2017**
Annual Days of Mathematics, Latakia University, Syria	**2016**
Journées Annuelles du GdR MOA, Dijon, France	**2015**
Séminaire ACSIOM, University of Montpellier, France	**2014**
Journées Annuelles du GdR MOA, Paris, France	**2013**

PROFESSIONAL MEMBERSHIPS

Member, American Mathematical Society (AMS) **October 2026–Present**

AWARDS & HONORS

Outstanding Academic Performance Award, Latakia University (formerly Tishreen University) **2005–2008**

LANGUAGES

Arabic · English · French