



Fatemeh P. A. Beik

Curriculum Vitae

Personal Information

Full name: Fatemeh Panjeh Ali Beik (Beik, F. P. A)
Academic rank: Associate professor.
Marital status: Married with one child.
Date of birth: December 16, 1981.
Place of birth: Tehran, Iran.

Educations

- 2007–2010 **Ph.D. of Applied Mathematics**, *Shahid Bahonar University of Kerman*, Kerman, Iran.
2005–2007 **Master of Applied Mathematics**, *Shahid Bahonar University of Kerman*, Kerman, Iran.
2000–2005 **Bachelor of Applied Mathematics**, *Vali-e-Asr University of Rafsanjan*, Rafsanjan, Iran.

Ph.D. Thesis

Title *Iterative methods for solving large and sparse linear system of equations*
Supervisor Professor Mahmoud Mohseni Moghadam

Honors

- 2007 Ranked first among all Master students of Applied Mathematics, Shahid Bahonar University of Kerman. (19.03/20)
2013 Outstanding young researcher of Vali-e-Asr University of Rafsanjan.
2015 Outstanding researcher of the Department of Mathematics, Vali-e-Asr University of Rafsanjan

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1/5

Memberships

- 2011–present **Member of Iranian Math. Soc.**
- 2013–present **Member of American Math. Soc.**
- 2011 **Member of scientific committee of 42th Annual Iranian Conference, Vali-e-Asr University of Rafsanjan, Rafsanjan, Iran.**
- 2014 **Member of scientific committee of 5th Conference of Numerical Analysis and its Applications, Vali-e-Asr University of Rafsanjan, Rafsanjan, Iran.**

Teaching Materials

- Topics on Numerical Linear Algebra (Ph. D. course)
- Topics on Iterative Methods for Solving Linear Systems (Ph. D. course)
- Control & System theory (Ph. D. course)
- Advanced Numerical Analysis (M. Sc. course)
- Approximation Theory (M. Sc. course)
- Numerical Methods in Linear Algebra (M. Sc. course)
- Calculus (B. Sc. course)
- Numerical Analysis (B. Sc. course)
- Numerical Linear Algebra (B. Sc. course)

Selected Papers

- F. P. A. Beik, F. S. Movahed and S. Ahmadi-Asl, On the Krylov subspace methods based on tensor format for positive definite Sylvester tensor equations, *Numerical Linear Algebra with Applications*, To appear. (ISI)
- S. Ahmadi-Asl and F. P. A. Beik, Iterative algorithms for least-squares solutions of a quaternion matrix equation, *Journal of Applied Mathematics and Computing*, To appear.
- F. P. A. Beik and D.K. Salkuyeh, An iterative algorithm for the best approximate (P, Q) -orthogonal symmetric and skew-symmetric solution pair of coupled matrix equations, *Transactions of the Institute of Measurement and Control*, DOI: 10.1177/0142331215611212. (ISI)
- D. K. Salkuyeh, M. Hasani and F. P. A. Beik, On the preconditioned AOR iterative method for Z-matrices, *Computational & Applied Mathematics*, DOI: 10.1007/s40314-015-0266-8. (ISI)
- F. P. A. Beik and S. Ahmadi-Asl, An iterative algorithm for η -(anti)-Hermitian least-squares solutions of quaternion matrix equations, *Electronic Journal of Linear Algebra (ELA)*, 30 (2015) 372–401. (ISI)
- F. P. A. Beik and D.K. Salkuyeh, An iterative algorithm for the least squares solutions of matrix equations over symmetric arrowhead matrices, *Journal of the Korean Mathematical Society*, 52 (2015) 349–372. (ISI)
- F. P. A. Beik and D.K. Salkuyeh, Weighted versions of GI-FOM and GI-GMRES for solving general coupled linear matrix equations, *Computational Mathematics and Mathematical Physics*, 55 (2015), no. 10, 1606–1618. (ISI)
- F. P. A. Beik and N. N. Shams, On the modified iterative methods for M-matrix linear system, *Bulletin of the Iranian Mathematical Society (BIMS)*, To appear. (ISI)
- D. K. Salkuyeh and F. P. A. Beik, Minimum norm least-squares solution to general complex coupled linear matrix equations via iteration, *FILOMAT*, 29 (2015) 1389–1407.(ISI)
- F. P. A. Beik and S. Ahmadi-Asl, Residual norm steepest descent based iterative algorithms for

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- Sylvester tensor equations, *Journal of Mathematical Modeling*, 2 (2015) 115–131.
- F. P. A. Beik and D.K. Salkuyeh, A finite iterative algorithm for Hermitian reflexive and skew-Hermitian solution groups of the general coupled linear matrix equations, *Journal of Applied Mathematics and Computing*, 48 (2015) 129-155.
 - F. P. A. Beik, A modified iterative algorithm for the (Hermitian) reflexive solution of the generalized Sylvester matrix equation, *Transactions of the Institute of Measurement and Control*, 36 (2014), no. 6, 815–827. (ISI)
 - F. P. A. Beik and M. M. Moghadam, The general coupled linear matrix equations with conjugate and transpose unknowns over the mixed groups of generalized reflexive and anti-reflexive matrices, *Computational & Applied Mathematics*, 33 (2014) 795–820. (ISI)
 - D. K. Salkuyeh and F. P. A. Beik, On the gradient based algorithm for solving the general coupled matrix equations, *Transactions of the Institute of Measurement and Control*, 36 (2014), no. 3, 375–381. (ISI)
 - F. P. A. Beik, Theoretical results on the global GMRES method for solving generalized Sylvester matrix equations, *Bulletin of the Iranian Mathematical Society (BIMS)*, 40 (2014), no. 5, 1097–1117.(ISI)
 - F. P. A. Beik and N. N. Shams, Preconditioned generalized mixed-type splitting iterative method for solving weighted least squares problems, *International Journal of Computer Mathematics*, 91 (2014), no. 5, 944–963. (ISI)
 - F. P. A. Beik, D.K. Salkuyeh and M. M. Moghadam, Gradient based iterative algorithm for solving the generalized coupled Sylvester-transpose and conjugate matrix equations over reflexive (anti-reflexive) matrices, *Transactions of the Institute of Measurement and Control*, 36 (2014), no. 1, 99-110. (ISI)
 - D.K. Salkuyeh and F. P. A. Beik, An iterative method to solve symmetric positive definite matrix equations, *Mathematical Reports*, 16 (2014), no. 2, 271–283. (ISI)
 - F. P. A. Beik and D.K. Salkuyeh, The coupled Sylvester-transpose matrix equations over generalized centro-symmetric matrices, *International Journal of Computer Mathematics*, 90 (2013), no. 7, 1546-1566. (ISI)
 - M. M. Moghadam and F. P. A. Beik, Comparison results on the preconditioned mixed-type splitting iterative method for M-matrix linear systems, *Bulletin of the Iranian Mathematical Society (BIMS)*, 38 (2012), no. 2, 349-367. (ISI)
 - F. P. A. Beik and D.K. Salkuyeh, On the global Krylov subspace methods for solving general coupled matrix equations, *Computers & Mathematics with Applications*, 62 (2011), no. 11, 4605-4613. (ISI)
 - M. M. Moghadam and F. P. A. Beik, A new weighted global full orthogonalization method for solving nonsymmetric linear systems with multiple right-hand sides, *Int. Elect. J. Pure Appl. Math.*, 2 (2010), no. 2, 47–67.

Conference Papers

- M. M. Moghadam and F. P. A. Beik, Improving block Gauss-Seidel iterative method for solving Z-matrix linear systems, The 39th Annual Iranian Mathematics conference, Shahid Bahonar University of Kerman, Kerman (2007)
- M. M. Moghadam and F. P. A. Beik, Modified block AOR iterative method for Z-matrices linear systems, The 40th Annual Iranian Mathematics conference, Sharif University of technology, Tehran (2008).
- F. P. A. Beik and M. M. Moghadam, Note to the preconditioned generalized mixed-type splitting

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3/5

- iterative method,, The 42th Annual Iranian Mathematics conference, Vali-e-Asr University of Rafsanjan, Rafsanjan (2011).
- F. P. A. Beik and M. M. Moghadam, Projection methods for solving Sylvester matrix equation, The 42th Annual Iranian Mathematics conference, Vali-e-Asr University of Rafsanjan, Rafsanjan (2011).
 - F. P. A. Beik and D.K. Salkuyeh, An iterative algorithm for the generalized (P,Q)-reflexive solution of the coupled Sylvester-transpose matrix equations, The 43rd Annual Iranian Mathematical conference, Tabriz Univerity, Tabriz (2012).
 - F. P. A. Beik and D.K. Salkuyeh, On the convergence of the GI-GMRES method for solving the general coupled linear matrix equations, The 43rd Annual Iranian Mathematical conference, Tabriz Univerity, Tabriz (2012).
 - F. P. A. Beik, Iterative algorithms for solving coupled Sylvester-transpse matrix equations, The 5th Mathematics conference of Payame Noor University, Shiraz (2012).
 - F. P. A. Beik and D. K. Salkuyeh, A projection technique for reflexive (anti-reflexive) solution of the coupled linear matrix equations, The 4th Conference on Mathematical Analysis and its Applications, Khansar (2013).
 - D. K. Salkuyeh and F. P. A. Beik, On the convergenc of the gradient-based iterative method, The 44th Annual Iranian Mathematics Conference, Ferdowsi University of Mashhad, (2013).
 - F. P. A. Beik, N. N. Shams and S. Ahmadi-Asl, A preconditioned GAOR iterative method for solving linear system of equations, The 7th Seminar on Linear Algebra and its Applications, Mashhad (2014).
 - F. P. A. Beik and S. Ahmadi-Asl, Note to the gradient-based iterative algorithm for solving Sylvester tensor equations, The 7th Seminar on Linear Algebra and its Applications, Mashhad (2014).
 - F. P. A. Beik and S. Ahmadi-Asl, On the execution and convergence of GMRES-BTF method for solving Sylvester tensor equations, The 45h Annual Iranian Mathematics Conference, Semnan University, (2014).
 - D. K. Salkuyeh, M. Hasani and F. P. A. Beik, The best preconditioned AOR method for a class of matrices, The 45h Annual Iranian Mathematics Conference, Semnan University, (2014).
 - F. P. A. Beik and F. S. Movahed, FOM-BTF: Full Orthogonalization method based on tensor format, 5th Conference on Mathematical Analysis and its Applications, Vali-e-Asr University, Rafsanjan, (2014).
 - F. P. A. Beik, S. Ahmadi-Asl and D. K. Salkuyeh, CGLS for general coupled linear matrix equations over Quaternions,5th Conference on Mathematical Analysis and its Applications, Vali-e-Asr University, Rafsanjan, (2014).
 - S. Ahmadi-Asl and F. P. A. Beik, An iterative algorithm for Hermitian tridiagonal least-squares solutions of quaternion matrix equations, The 8th Seminar on Linear Algebra and its Applications, University of Kurdistan, (2015).

Ph.D. Students

- 2013–present **Salman Ahmadi-Asl**, *New developments on iterative methods to solve some classes of linear operator equations*, Advisor: Prof. M. M. Moghadam.
- 2014–present **Hassan Azizi**.
- 2014–present **Maryam Kargar**.

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M.Sc. Students

- 2011–2013 **Nafiseh Naseri Shams**, *Mixed-Type splitting iterative method for solving linear system of equations*, Defense date: August 19, 2013, Advisor: Prof. M. M. Moghadam.
- 2012–2014 **Raziyeh Mirzashemi**, *Numerical solutions of matrix differential equations using cubic-matrix splines*, Defense date: September 18, 2014, Advisor: Dr. Z. Rahbani.
- 2012–2014 **Batool Rahmani**, *Preconditioned generalized accelerated overrelaxtion iterative methods for solving linear system of equations*, Defense date: September 18, 2014.
- 2012–2014 **Arezo Keshvari-Pour**, *Hermitian and skew-Hermitian splitting (HSS) iterative method for solving linear matrix equations*, Defense date: October 18, 2014.
- 2013–2015 **Shima Adelinia**, *Iterative methods for solving complex symmetric linear systems*, Defense date: August 29, 2015.
- 2013–2015 **Elham Moradi**, *Matrix iterative methods for constraint solutions of the matrix equations*, Defense date: August 29, 2015.
- 2013–2015 **Mobarakeh Gharavi**, *Numerical solution of matrix equations via conjugate gradient method*, Defense date: September 22, 2015.
- 2014–present **Fereshteh Heidarpour**, *Iterative methods for solving matrix equations with matrix inequality constraints*.
- 2014–present **Fatemeh Zebardast**, *A class of iterative methods for solving saddle point problem*.

Additional Activities

- Reviewer in Mathematical Reviews (MathSciNet)
- Referee for the following journals
 - Bulletin of the Iranian Mathematical Society
 - Mathematical Problem in Engineering
 - Journal of Mathematical Modelling
 - Transactions of the Institute of Measurement and Control
 - Iranian Journal of Numerical Analysis and Optimization
 - Ain Shams Engineering Journal
 - Computers & Mathematics with Applications
 - IET Control Theory & Applications
 - Journal of Applied Mathematics and Computing
 - Asian Journal of Control
 - Iranian Journal of Science and Technology (Sciences)

Languages

Persian **Mothertongue**
English **Intermediate**

Interests

- Doing reaserch in the subject of the Numerical Linear Algebra
- Reading psychology books
- Cooking



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- Swimming

- Running

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6/5