

# Prof. RABİA AKTAŞ KARAMAN

## Personal Information

Office Phone: [+90 312 216 8975](tel:+903122168975)

Email: [raktas@science.ankara.edu.tr](mailto:raktas@science.ankara.edu.tr)

Web: <https://avesis.ankara.edu.tr/raktas>

## International Researcher IDs

ScholarID: DotEs2MAAAAJ

ORCID: 0000-0002-7811-8610

Publons / Web Of Science ResearcherID: C-1228-2018

ScopusID: 25823678500

Yoksis Researcher ID: 105311

## Education Information

Doctorate, Ankara University, Fen Bilimleri Enstitüsü, Matematik (Dr), Turkey 2007 - 2012

Postgraduate, Ankara University, Fen Bilimleri Enstitüsü, Matematik (YI) (Tezli), Turkey 2004 - 2007

Undergraduate, Ankara University, Fen Fakültesi, Matematik Bölümü, Turkey 2000 - 2004

## Foreign Languages

English, C1 Advanced

## Certificates, Courses and Trainings

Occupational Health and Safety, İş Sağlığı ve Güvenliği, Ankara Üniversitesi, 2022

## Dissertations

Doctorate, Çok değişkenli ortogonal polinomların özelliklerinde bazı genişletmeler, Ankara University, Fen Bilimleri Enstitüsü, Matematik (Dr), 2012

Postgraduate, Çok değişkenli ortogonal polinomlar, Ankara University, Fen Bilimleri Enstitüsü, Matematik (YI) (Tezli), 2007

## Research Areas

Integral Transformations, Computational Calculation, Partial Differential Equations, Special Functions, Approximations and Expansions, Natural Sciences

## Academic Titles / Tasks

Professor, Ankara University, Fen Fakültesi, Matematik Bölümü, 2021 - Continues

Associate Professor, Ankara University, Fen Fakültesi, Matematik Bölümü, 2015 - 2021

Research Assistant, Ankara University, Fen Fakültesi, Matematik Bölümü, 2005 - 2015

## Academic and Administrative Experience

Enstitü Yönetim Kurulu Üyesi, Ankara University, Fen Fakültesi, Matematik Bölümü, 2020 - Continues

Vice Dean, Ankara University, 2017 - 2017

## Courses

MATEMATİK I, Undergraduate, 2022 - 2023

Diferensiyel Denklemler, Undergraduate, 2022 - 2023

ORTOGONAL POLİNOMLAR, Undergraduate, 2022 - 2023

Advanced Partial Differential Equations, Undergraduate, 2021 - 2022

Bitirme Projesi, Undergraduate, 2021 - 2022

Diferensiyel Denklemler, Undergraduate, 2022 - 2023

Orthogonal Polynomials, Undergraduate, 2022 - 2023

Partial Differential Equations, Undergraduate, 2021 - 2022

Mathematics, Undergraduate, 2021 - 2022

## Advising Theses

Aktaş Karaman R., Ortogonal polinomların integral dönüşümleri ve uygulamaları, Postgraduate, E.MEMET(Student), 2024

Aktaş Karaman R., Ayrık iki değişkenli ortogonal polinomlar, Postgraduate, Ş.Müge(Student), 2022

AKTAŞ R., İki Değişkenli Sonlu Ortogonal Polinom Aileleri ve Bazı Özellikleri, Doctorate, E.GÜLDÖĞAN(Student), 2021

AKTAŞ R., Simetrik ortogonal fonksiyon aileleri / Families of symmetric orthogonal functions, Postgraduate, B.Ülkü(Student), 2020

AKTAŞ R., İki değişkenli bazı ortogonal polinom ailelerinin özellikleri, Postgraduate, G.ÖZTÜRK(Student), 2017

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A study on Sobolev orthogonal polynomials on a triangle**  
AKTAŞ KARAMAN R., Lekesiz E. G., AYGAR KÜÇÜKEVCİLİOĞLU Y.  
NUMERICAL ALGORITHMS, vol.97, no.2, pp.915-944, 2024 (SCI-Expanded)
- II. **A Study of the scattering analysis of the multiplicative Sturm-Liouville problem**  
ÖZNUR G. B., ÖZBEY G. G., AYGAR KÜÇÜKEVCİLİOĞLU Y., AKTAŞ KARAMAN R.  
TURKISH JOURNAL OF MATHEMATICS, no.3, 2024 (SCI-Expanded)
- III. **Monomial and Rodrigues orthogonal polynomials on the cone**  
AKTAŞ R., Branquinho A., Foulquié-Moreno A., Xu Y.  
Journal of Mathematical Analysis and Applications, vol.522, no.2, 2023 (SCI-Expanded)
- IV. **Fourier Transforms of Some Special Functions in Terms of Orthogonal Polynomials on the Simplex and Continuous Hahn Polynomials**  
Lekesiz E. G., AKTAŞ R., Area I.  
BULLETIN OF THE IRANIAN MATHEMATICAL SOCIETY, vol.48, no.6, pp.3535-3560, 2022 (SCI-Expanded)
- V. **Three term relations for multivariate Uvarov orthogonal polynomials**  
AKTAŞ R., Area I., Perez T. E.  
COMPUTATIONAL & APPLIED MATHEMATICS, vol.41, no.7, 2022 (SCI-Expanded)

- VI. **Fourier Transform of the Orthogonal Polynomials on the Unit Ball and Continuous Hahn Polynomials**  
Lekesiz E. G., AKTAŞ R., Area I.  
AXIOMS, vol.11, no.10, 2022 (SCI-Expanded)
- VII. **A Dunkl-Gamma type operator in terms of generalization of two-variable Hermite polynomials**  
ÇEKİM B., AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
INDIAN JOURNAL OF PURE & APPLIED MATHEMATICS, vol.53, no.3, pp.727-735, 2022 (SCI-Expanded)
- VIII. **On a Symmetric Generalization of Bivariate Sturm-Liouville Problems**  
Tefo Y. G., AKTAŞ R., Area I., Lekesiz E. G.  
BULLETIN OF THE IRANIAN MATHEMATICAL SOCIETY, vol.48, no.4, pp.1649-1665, 2022 (SCI-Expanded)
- IX. **On approximation properties of generalized Lupaş type operators based on Polya distribution with Pochhammer k-symbol**  
GÜREL YILMAZ Ö., AKTAŞ R., Taşdelen F., Olgun A.  
Hacettepe Journal of Mathematics and Statistics, vol.51, no.2, pp.338-361, 2022 (SCI-Expanded)
- X. **Fourier Transforms of Some Finite Bivariate Orthogonal Polynomials**  
Guldogan Lekesiz E., AKTAŞ R., Masjed-Jamei M.  
SYMMETRY-BASEL, vol.13, no.3, 2021 (SCI-Expanded)
- XI. **On Some Formulas for the k-Analogue of Appell Functions and Generating Relations via k-Fractional Derivative**  
GÜREL YILMAZ Ö., AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
FRACTAL AND FRACTIONAL, vol.4, no.4, 2020 (SCI-Expanded)
- XII. **On Finite Classes of Two-Variable Orthogonal Polynomials**  
Guldogan E., AKTAŞ R., Masjed-Jamei M.  
BULLETIN OF THE IRANIAN MATHEMATICAL SOCIETY, vol.46, no.4, pp.1163-1194, 2020 (SCI-Expanded)
- XIII. **Some classes of special functions using Fourier transforms of some two-Variable orthogonal polynomials**  
Guldogan E., AKTAŞ R., Area I.  
INTEGRAL TRANSFORMS AND SPECIAL FUNCTIONS, vol.31, no.6, pp.437-470, 2020 (SCI-Expanded)
- XIV. **Properties of Some of Two-Variable Orthogonal Polynomials**  
Milovanovic G., Ozturk G., AKTAŞ R.  
BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY, vol.43, no.2, pp.1403-1431, 2020 (SCI-Expanded)
- XV. **Analytical Solutions of Some General Classes of Differential and Integral Equations by Using the Laplace and Fourier Transforms**  
Srivastava H. M., Masjed-Jamei M., AKTAŞ R.  
FILOMAT, vol.34, no.9, pp.2869-2876, 2020 (SCI-Expanded)
- XVI. **Dunkl-Gamma Type Operators Including Appell Polynomials**  
TAŞDELEN YEŞİLDAL F., Soylemez D., AKTAŞ R.  
COMPLEX ANALYSIS AND OPERATOR THEORY, vol.13, no.7, pp.3359-3371, 2019 (SCI-Expanded)
- XVII. **A Dunkl Analogue of Operators Including Two-Variable Hermite polynomials**  
AKTAŞ R., ÇEKİM B., TAŞDELEN YEŞİLDAL F.  
BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY, vol.42, no.5, pp.2795-2805, 2019 (SCI-Expanded)
- XVIII. **Kantorovich-Stancu type operators including Boas-Buck type polynomials**  
ÇEKİM B., AKTAŞ R., İÇÖZ G.  
HACETTEPE JOURNAL OF MATHEMATICS AND STATISTICS, vol.48, no.2, pp.460-471, 2019 (SCI-Expanded)
- XIX. **Stancu Type Generalization of Szasz-Durrmeyer Operators Involving Brenke-Type Polynomials**  
AKTAŞ R., Soylemez D., TAŞDELEN YEŞİLDAL F.  
FILOMAT, vol.33, no.3, pp.855-868, 2019 (SCI-Expanded)
- XX. **A NEW FAMILY OF ANALYTIC FUNCTIONS DEFINED BY MEANS OF RODRIGUES TYPE FORMULA**  
AKTAŞ R., Altın A., TAŞDELEN YEŞİLDAL F.  
MATHEMATICA SLOVACA, vol.68, no.3, pp.607-616, 2018 (SCI-Expanded)

- XXI. **Harmonic functions associated with some polynomials in several variables**  
TAŞDELEN YEŞİLDAL F., AKTAŞ R., DUMAN E.  
TURKISH JOURNAL OF MATHEMATICS, vol.42, no.4, pp.1803-1814, 2018 (SCI-Expanded)
- XXII. **Miscellaneous Properties for a Class of Complex Functions Defined by Rodrigues Type Formula**  
AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
FILOMAT, vol.32, no.20, pp.6903-6909, 2018 (SCI-Expanded)
- XXIII. **On parameter derivatives of a family of polynomials in two variables**  
AKTAŞ R.  
APPLIED MATHEMATICS AND COMPUTATION, vol.256, pp.769-777, 2015 (SCI-Expanded)
- XXIV. **MULTIVARIABLE MATRIX GENERALIZATION OF GOULD-HOPPER POLYNOMIALS**  
ÇEKİM B., AKTAŞ R.  
MISKOLC MATHEMATICAL NOTES, vol.16, no.1, pp.79-89, 2015 (SCI-Expanded)
- XXV. **Some new results for the multivariable Humbert polynomials**  
AKTAŞ R.  
MATHEMATICA SLOVACA, vol.64, no.6, pp.1437-1450, 2014 (SCI-Expanded)
- XXVI. **A note on parameter derivatives of the Jacobi polynomials on the triangle**  
AKTAŞ R.  
APPLIED MATHEMATICS AND COMPUTATION, vol.247, pp.368-372, 2014 (SCI-Expanded)
- XXVII. **A note on multivariable Humbert matrix polynomials**  
AKTAŞ R.  
Gazi University Journal of Science, vol.27, no.2, pp.747-754, 2014 (SCI-Expanded)
- XXVIII. **EXTENDED JACOBI MATRIX POLYNOMIALS**  
AKTAŞ R., ÇEKİM B., Cevik A.  
UTILITAS MATHEMATICA, vol.92, pp.47-64, 2013 (SCI-Expanded)
- XXIX. **On a Family of Multivariate Modified Humbert Polynomials**  
AKTAŞ R., DUMAN E.  
SCIENTIFIC WORLD JOURNAL, vol.2013, 2013 (SCI-Expanded)
- XXX. **A CLASS OF MULTIVARIABLE POLYNOMIALS ASSOCIATED WITH HUMBERT POLYNOMIALS**  
AKTAŞ R., Altin A.  
HACETTEPE JOURNAL OF MATHEMATICS AND STATISTICS, vol.42, no.4, pp.359-372, 2013 (SCI-Expanded)
- XXXI. **BILATERAL AND BILINEAR GENERATING FUNCTIONS FOR THE GENERALIZED ZERNIKE OR DISC POLYNOMIALS**  
AKTAŞ R., TAŞDELEN YEŞİLDAL F., Yavuz N.  
ARS COMBINATORIA, vol.111, pp.389-400, 2013 (SCI-Expanded)
- XXXII. **ON A MULTIVARIABLE EXTENSION OF THE HERMITE AND RELATED POLYNOMIALS**  
Altin A., AKTAŞ R., ÇEKİM B.  
ARS COMBINATORIA, vol.110, pp.487-503, 2013 (SCI-Expanded)
- XXXIII. **The Laguerre polynomials in several variables**  
AKTAŞ R., DUMAN E.  
MATHEMATICA SLOVACA, vol.63, no.3, pp.531-544, 2013 (SCI-Expanded)
- XXXIV. **Some New Results for Jacobi Matrix Polynomials**  
ÇEKİM B., Altin A., AKTAŞ R.  
FILOMAT, vol.27, no.4, pp.713-719, 2013 (SCI-Expanded)
- XXXV. **Sobolev Orthogonal Polynomials on a Simplex**  
AKTAŞ R., Xu Y.  
INTERNATIONAL MATHEMATICS RESEARCH NOTICES, vol.2013, no.13, pp.3087-3131, 2013 (SCI-Expanded)
- XXXVI. **A Kantorovich-Stancu Type Generalization of Szasz Operators including Brenke Type Polynomials**  
AKTAŞ R., ÇEKİM B., TAŞDELEN YEŞİLDAL F.  
JOURNAL OF FUNCTION SPACES AND APPLICATIONS, 2013 (SCI-Expanded)
- XXXVII. **A Kantorovich Type of Szasz Operators Including Brenke-Type Polynomials**  
TAŞDELEN YEŞİLDAL F., AKTAŞ R., Altin A.

- ABSTRACT AND APPLIED ANALYSIS, vol.2012, 2012 (SCI-Expanded)
- XXXVIII. **THE MATRIX VERSION FOR THE MULTIVARIABLE HUMBERT POLYNOMIALS**  
AKTAŞ R., ÇEKİM B., Sahin R.  
MISKOLC MATHEMATICAL NOTES, vol.13, no.2, pp.197-208, 2012 (SCI-Expanded)
- XXXIX. **Miscellaneous properties of some multivariable polynomials**  
DUMAN E., Altın A., AKTAŞ R.  
MATHEMATICAL AND COMPUTER MODELLING, vol.54, no.9-10, pp.1875-1885, 2011 (SCI-Expanded)
- XL. **On a multivariable extension of the Humbert polynomials**  
AKTAŞ R., Sahin R., Altın A.  
APPLIED MATHEMATICS AND COMPUTATION, vol.218, no.3, pp.662-666, 2011 (SCI-Expanded)
- XLI. **A note on a family of two-variable polynomials**  
AKTAŞ R., Altın A., TAŞDELEN YEŞİLDAL F.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.235, no.16, pp.4825-4833, 2011 (SCI-Expanded)
- XLII. **On a multivariable extension of Jacobi matrix polynomials**  
TAŞDELEN YEŞİLDAL F., ÇEKİM B., AKTAŞ R.  
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.61, no.9, pp.2412-2423, 2011 (SCI-Expanded)
- XLIII. **SOME RELATIONS SATISFIED BY ORTHOGONAL MATRIX POLYNOMIALS**  
ÇEKİM B., Altın A., AKTAŞ R.  
HACETTEPE JOURNAL OF MATHEMATICS AND STATISTICS, vol.40, no.2, pp.241-253, 2011 (SCI-Expanded)
- XLIV. **On a multivariable extension for the extended Jacobi polynomials**  
Altın A., AKTAŞ R., DUMAN E.  
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.353, no.1, pp.121-133, 2009 (SCI-Expanded)

## Articles Published in Other Journals

- I. **New quadruple hypergeometric series and their integral representations**  
BIN SAAD M. G., YOUNIS J. A., AKTAŞ R.  
Sarajevo Mathematical Journal, vol.14, no.1, pp.45-57, 2018 (Peer-Reviewed Journal)
- II. **Integral representations for certain quadruple hypergeometric series**  
BIN SAAD M. G., YOUNIS J. A., AKTAŞ R.  
Far East Journal of Mathematical Sciences, vol.103, no.1, pp.21-44, 2018 (Peer-Reviewed Journal)
- III. **Representations for parameter derivatives of some Koornwinder polynomials in two variables**  
AKTAŞ R.  
Journal of the Egyptian Mathematical Society, vol.24, no.4, pp.555-561, 2016 (Peer-Reviewed Journal)
- IV. **A Generalization of the Extended Jacobi Polynomials in Two Variables**  
AKTAŞ R., DUMAN E.  
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.28, no.3, pp.503-521, 2015 (ESCI)
- V. **On a family of multivariable polynomials defined through Rodrigues type formula**  
GÜREL YILMAZ Ö., AKTAŞ R., ALTIN A.  
Journal of Classical Analysis, vol.4, no.2, pp.167-180, 2014 (Peer-Reviewed Journal)
- VI. **Multivariable Jacobi polynomials via fractional calculus**  
AKTAŞ R., ŞAHİN R., TAŞDELEN YEŞİLDAL F.  
Journal of fractional Calculus and Applications, vol.4, no.2, pp.335-348, 2013 (Peer-Reviewed Journal)
- VII. **On a Two Variable Analogue of Bessel Functions**  
AKTAŞ R., Altın A., ÇEKİM B.  
JOURNAL OF INEQUALITIES AND SPECIAL FUNCTIONS, vol.3, no.4, pp.13-23, 2012 (ESCI)
- VIII. **A class of polynomials in two variables**  
Altın A., AKTAŞ R.  
Mathematica Moravica, vol.14, no.1, pp.1-14, 2010 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **A study of a family of orthogonal functions in two variables**  
AKTAŞ R., Öztürk G., Taşdelen F.  
1st International Conference on Physics, Mathematics and Statistics, ICPMS 2018, Shanghai, China, 12 - 14 May 2018, vol.1053
- II. **Miscellaneous Properties for a Class of Analytic Functions Defined by Rodrigues Type Formula**  
AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
APPROXIMATION AND COMPUTATION THEORY AND APPLICATIONS (ACTA 2017), 30 November - 02 December 2017
- III. **A generalization of two-variable orthogonal functions**  
AKTAŞ R., Öztürk G., TAŞDELEN YEŞİLDAL F.  
Computational Methods and Function Theory 2017 (CMFT 2017), 10 - 15 July 2017
- IV. **A study on harmonic functions associated with Jacobipolynomials on the triangle**  
AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
Computational Methods and Function Theory 2017 (CMFT 2017), 10 - 15 July 2017
- V. **A Study on a Family of Two-Variable Orthogonal Polynomials**  
ÖZTÜRK G., AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
International Conference on Applied Analysis and Mathematical Modeling 2017, İstanbul, Turkey, 3 - 07 July 2017
- VI. **A Note on Parameter Derivatives of Some Koornwinder Polynomials in Two Variables**  
AKTAŞ R.  
International Conference on Mathematics and Mathematics Education (ICMME-2017), 11 - 13 May 2017
- VII. **Miscellaneous Properties of a Family of Orthogonal Polynomials in Two Variables**  
ÖZTÜRK G., AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
International Workshop on Mathematical Methods in Engineering, Ankara, Turkey, 27 - 29 April 2017
- VIII. **On some properties of Modified Humbert polynomials in several variables**  
AKTAŞ R.  
24th Conference on Applied and Industrial Mathematics (CAIM 2016), Craiova, Romania, 15 - 18 September 2016
- IX. **A new two variable analogue of Jacobi polynomials**  
AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
International Congress on Fundamental and Applied Sciences (ICFAS 2016), İstanbul, Turkey, 22 - 26 August 2016
- X. **A note on a class of polynomials of several variables**  
AKTAŞ R.  
International Congress on Fundamental and Applied Sciences (ICFAS 2016), İstanbul, Turkey, 22 - 26 August 2016
- XI. **Some properties of a family of functions defined via Rodrigues type formula**  
AKTAŞ R.  
Emerging Trends in Applied Mathematics and Mechanics (ETAMM 2016), Perpignan, France, 30 May - 03 June 2016
- XII. **A class of polynomials which are orthogonal over the elliptic domain**  
AKTAŞ R., TAŞDELEN YEŞİLDAL F.  
International Conference on Mathematics and Mathematics Education (ICMME), Elazığ, Turkey, 12 - 14 May 2016
- XIII. **Parameter Derivatives of the Jacobi Polynomials with Three Variables on the Simplex**  
AKTAŞ R.  
3th International Conference on Industrial Engineering and Applications (ICIEA), Hong Kong, PEOPLES R CHINA, 28 - 30 April 2016, vol.68
- XIV. **Representations for the Parameter Derivatives of Orthogonal Polynomials in Two Variables**  
AKTAŞ R.  
13th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-13), Gaithersburg, Maryland, United States Of America, 1 - 05 June 2015
- XV. **İki Değişkenli Ortogonal Polinomların Bir Ailesi İçin Parametrik Türev Gösterimleri**  
AKTAŞ R.

14. Matematik Sempozyumu, Niğde, Turkey, 14 - 16 May 2015
- XVI. **A New Multivariable Extension of Humbert Matrix Polynomials**  
AKTAŞ R.  
11th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Greece, 21 - 27 September 2013, vol.1558, pp.1128-1131
- XVII. **Humbert polinomlarına ilişkin çok değişkenli polinomların bir ailesi**  
AKTAŞ R., ALTIN A.  
7. Ankara Matematik Günleri, Turkey, 31 May - 01 June 2012
- XVIII. **Bessel Fonksiyonlarının İki Değişkenli Bir Analöğü**  
AKTAŞ R., ALTIN A., ÇEKİM B.  
5. Ankara Matematik Günleri, Turkey, 3 - 04 June 2010
- XIX. **Kesirli türev yardımıyla matris hipergeometrik fonksiyonlar için doğurucu fonksiyonlar**  
ŞAHİN R., ALTIN A., AKTAŞ R.  
5. Ankara Matematik Günleri, Turkey, 3 - 04 June 2010
- XX. **Ortogonal matris polinomları tarafından sağlanan bazı bağıntılar**  
ÇEKİM B., ALTIN A., AKTAŞ R.  
5. Ankara Matematik Günleri, Turkey, 3 - 04 June 2010
- XXI. **İki Değişkenli Polinomların Bir Ailesi için Doğurucu Fonksiyon ve Rekürans Bağıntıları**  
AKTAŞ R., ALTIN A.  
3. Ankara Matematik Günleri, Turkey, 22 - 23 May 2008
- XXII. **A generating function and some recurrence relations for a family of polynomials**  
AKTAŞ R., Altin A.  
12th WSEAS International Conference on APPLIED MATHEMATICS, Cairo, Egypt, 29 - 31 December 2007, pp.118-120

## Scientific Refereeing

Research in Mathematics, Journal Indexed in ESCI, October 2022

MATHEMATICS AND COMPUTERS IN SIMULATION, Journal Indexed in SCI-E, September 2022

DEMONSTRATIO MATHEMATICA, Journal Indexed in SCI-E, July 2022

Constructive Mathematical Analysis, National Scientific Refreed Journal, February 2022

## Metrics

Publication: 80

Citation (WoS): 266

Citation (Scopus): 290

H-Index (WoS): 10

H-Index (Scopus): 10