# CURRICULUM VITAE

Name

Mohamed Saad Mohamed Akel

Date and Place of Birth 15/10/1965 Egypt

E-Mail address

makel65@yahoo.com makel@kfu.edu.sa



# Academic Responsibilities:

- Assistant of Mathematics (1988-1991), Department of Mathematics, Faculty of Science, Assuit University, Egypt.
- Assistant Lecturer of Pure Mathematics (1991-1996), Department of Mathematics, Faculty of Science, Assuit University, Egypt.
- Lecturer of Pure Mathematics (1996-2001), Department of Mathematics, Faculty of Science, South Valley University, Egypt.
- Assistant Professor of Pure Mathematics (2001- ), Department of Mathematics and Statistics , Faculty of Science, King Faisal University

#### **Scientific Degrees:**

- B.Sc. in Mathematics (distinction with honor), 1987, Department of Mathematics, Faculty of Science, Assuit University, Egypt.
- M.Sc. in Pure Mathematics, 1991, Department of Mathematics, Faculty of Science, Assuit University, Egypt.
- Ph. D. In Mathematics, 1996, Freie Uni. Berlin, Germany.

### Scientific Work:

MSc Thesis: "On the generalized solutions to second order elliptic equations in unbounded regions."

Ph D. Thesis: "Boundary value problems for complex elliptic partial differential equations of higher orders."

### **Scientific Papers:**

- **M. Akel,** H. Begehr: On nonlinear Riemann – Hilbert boundary value problems for second order elliptic systems in the plane. Applicable Analysis Vol.63, 1996, pp331-351.

- M. Akel, H. Begehr: On the Pompeiu operator of higher order and applications. Complex variables Vol.32, 1997, pp233-261.

- M. Akel: On a generalized Riemann – Hilbert boundary value problem for second order elliptic systems in the plane In Complex analytic methods for partial differential equations, 1999Edited by H. Begehr and et al

- Hussien Shafei Hussien, **Mohamed Saad Akel** and Mostafa Ali El Khatib, A Spectral Optimization Method for Solving Boundary Value Problem for Non Linear

Systems of Elliptic Partial Differential Equations with A Package Software, Fourth Saudi Science Conference, Al-Madinah Al-Munawarah, KSA, March, 2010. Accepted in International Journal of Numerical Methods and Applications, 2011.

- Akel, M. S. and Hussien, H. S.," Numerical Treatment of Solving Singular And Weakly Singular Integral Equations and related Boundary Value Problems", Applied Mathematics and Computation, 218 (7) 2011, 3565-3573.

-Akel, M. S. and Hussien, H. S., "Two Basic Boundary-Value Problems for the in an infinite sector", Advances in pure and applied inhomogeneous Cauchy-Riemann mathematics, Vol. 3(3)2012, 315-328.

-Akel, M. S. and Begehr, H., "A Schwarz Problem for First Order Elliptic Systems in Unbounded Sectors", accepted to published in Eurasian Mathematical Journal.

- Akel M. and Alabdad F., " A Riemann-Hilbert boundary value problem in a bounded sector" Complex Variables and Elliptic Equations, 2014, http://dx.doi.org/10.1080/17476933.2014.944866.

- **Akel M.** and Alabdad F., " A Riemann-Hilbert boundary value problem in a triangle " J. Math. Anal. Appl. 424 (2015) 523–536, http://dx.doi.org/10.1016/j.jmaa.2014.11.022.

- **Akel M.** and Alabdad F., " Riemann-Hilbert-type problems in a half hexagon" Submitted.

#### Thesis's supervision:

- Riemann-Hilbert boundary value problems, M.Sc. thesis submitted by Abdulla Sulaiman Alshams, KFU, awarded 2005.

- Transmission and reflection of non-linear gravity waves through an aperture in a vertical barrier in the frame of the shallow water theory, M.Sc. thesis submitted by Kawther Khaled Al Arfaj, KFU, awarded 2013.

- Riemann-Hilbert boundary value problems in bounded planar domains, M.Sc. thesis, Fatimah Abdulla Al-Abad, awarded 2014.

#### List of research projects, finished and current

1) Hussien, H. S., Akel, M. S. and El Khatib, M. A "A Software package for Solving Boundary Value Problems for nonlinear Systems of Elliptic Partial Differential Equations", end at March 2010. Project No. 10091.

(2) Akel, M. S. and Hussien, H. S.," Numerical Treatment of Solving Singular And Weakly Singular Integral Equations and related Boundary Value Problems", end at March 2011. Project No. 110110.

(3) Akel, M. S. and Hussien, H. S., "Basic Boundary-Value Problems for linear complex partial differential equations in unbounded planer domains", start at Feb. 2011. Project No. 120047.

(4) Akel, M. S. and Hussien, H. S.," Comparison of numerical regularization methods for solving singular integral equations with Cauchy Kernel ", end at March 2013. . Project Code 7554. (5) Akel, M. S. and Hussien, H. S.," Boundary Value Problems for Complex Partial Differential Equations in Sectoral-shaped Domains. . Project No. 140041.

(6) Akel, M. S. "The parqueting-reflection principle for constructing Green functions and some basic boundary value problems for second order elliptic equations in unbounded sectoral domains in the complex plane ". Project No. 150137.

## **Teaching Activates: Undergraduate Courses & Graduate Courses**

A- Undergraduate Courses

Calculus, Advanced Calculus, Ordinary Differential Equations, Linear Algebra, Principle of Analysis, Real Analysis (1), Complex Analysis, Differential Forms and Vector Analysis, Partial Differential Equations, Applied Mathematics, General Topology, Foundation of Geometry (Euclidean and Non-Euclidean Geometry)

**B-** Graduate Courses

Complex Analysis I, Complex Analysis II, Boundary value Problems, Partial Differential Equations, Ordinary Differential Equations, Special Functions in Applied Mathematics.