

# CURRICULUM VITAE

## PERSONAL DATA

*First name:* kamel

*Middle name:* Abdel Rahman

*Last name:* Mohamed

*Date and lieu of birth:* 16December 1971 in Assiut –Egypt

*E-mail:* [kamel16@yahoo.com](mailto:kamel16@yahoo.com)

*Nationality:* Egyptian

## ADDRESS:

### **1 Administrative:**

1-Department of mathematics- New-Valley Faculty of science - Assiut University – Egypt

2- Faculty of science. Department of mathematics, Taibah University , Al-Madinah Al-Munawarah- Kingdom of Saudi Arabia

### **2--Personal:**

- Emarat El Zehore (98), EL Wadi EL Gadid,(New-Valley) El Kharga, Egypt
- Soultanah- Al-Madinah Al-Munawarah- Kingdom of Saudi Arabia

Mobile: 0563233768- 0599700760

## POSITIONS:

**Employment : 2010 –2020** - Assistant professor of computation mathematics and numerical analysis , collage of science, Taibah University

2007-2010 Assistant professor of mathematics and computer science , Teacher Collage and Collage of applied sciences , Taibah University

**December 2005 –2007** –Associate researcher (Lecturer) of mathematics and Computer Science at the sciences and mathematics department- New-Valley Faculty of Education –Assiut University –Egypt.

**1996-2000:** Assistant of mathematics at the sciences and mathematics department- New-Valley Faculty of Education –Assiut University –Egypt.,

### **ACADEMIC QUALIFICATIONS**

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**Doctoral degree:** PhD in computation mathematics ( Scientific Computation) at Group Modeling and scientific computations- LAGA-Institute Galilee – University Paris13- France.

Thesis entitled: " Finite Volume Numerical Simulation, of stiff

Multidimensional Flow Phenomena, by a two steps Flux Scheme", with distinction ( very Honorable) (October 2001- October 2005)

**2001 :** Equivalence of the master degree from university of paris13- France

**1996-1997:** Courses M.S. in Mathematics from Assiut University –Egypt

**Bachelor of science** (mathematics)(1992-1995): Assuit University- Egypt, with distinction (very good )

### **COMPETENCES:**

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**Scientific computations:** Non structured meshes , Roe Solver, equilibrium scheme, a new non homogeneous Riemann Solver (NHRS) et special SRNHR scheme

**Modeling:** problems of stiff Multidimensional Flow Phenomena , Shallow water equations with source terms, Euler's Equations , two -phase flow, sediment transport models , pollutant transport models. Two layers shallow water flow , blood flow, ultra flow , system of conservation laws

**Numerical analysis :** Finite Volume, Finite difference, finite element , method of characteristic

Non linear approximation of problems: Hyperbolic systems with source terms

**Graph theory**

## **ACTIVITIES OF RESEARCH:**

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- Mathematical modeling
- Shallow water flows
- Transport of suspended sediments
- Pollutant transport model
- two-phase granular flows
- One –pressure model of two-phase flows
- Hyperbolic conservation laws and the structure of the equations of fluid mechanics
- Blood flow
- Euler equations
- Ultra flow
- Parallel computing
- Graph theory

The objective of my of research is the powerful development and application of numerical scheme , for the simulation of problems of stiff flows of fluid in one-dimensional and two-dimensional framework .

## **PUBLICATIONS AND COMMUNICATIONS**

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- [1]- **K. Mohamed**, Aly Seadawy" Finite volume scheme for numerical simulation of the sediment transport model ", International Journal of Modern Physics B, Vol. 33, No. 24 (2019) 1950283 (24 pages)
- [2]- Salama N. Daoud and **Kamel A. Mohamed** “The complexity of some families of cycle-related graphs ” Journal of taibah university for science 11(2017), pp. 205-228.
- [3]- A. Elsonbaty and **K. Mohamed**" On Some Variants of Gracefulness of Cycle Graphs” ARS COMBINATORIA, Oct(2017).135.pp.39-50.

- [4]- **K. Mohamed** and F.benkhaloun " A modified Rusanov scheme for shallow water equations with topography and two phase flows ” , Eur. Phys. J. Plus (2016) 131(6). pp.1-19.
- [5]-H.Shaban and **K. Mohamed**" Neural-network-based speed controller for induction motors using inverse dynamics ” , Eur. Phys. J. Plus (2016) 131: 292. pp.1-12.
- [6]-S.N. Daoud and **K. Mohamed**, Number of Spanning Trees for Shadow of Some Graphs, International J.Math. Combin. Vol.4(2013), 103-115
- [7]-**K. Mohamed**" A Finite Volume method for numerical simulation of shallow water models with porosity” , Journal computer and fluids 104(2014), pp.9-19.
- [8]-Salama N. Daoud and **Kamel A. Mohamed** “Complexity of some special named graphs with double edges” Journal of taibah university for science 8(2014), pp. 162-174.
- [9]-S.N. Daoud and **K. Mohamed**, Number of Spanning Trees of Products with Fan and Wheel Graphs, Wulfenia Journal ISSN 1561-882X Vol 21, No. 4;Apr (2014) 111-124
- [10]- Hassanien S. Ahmed, **K. Mohamed** and Samir M.AL sheriff “ Travelling wave ultrasonic motors control using artificial neural networks” European Journal of scientific research, Vol.99,No.2 (2013), pp.215-233.
- [11]- **K. Mohamed**, H.Shaban " Numerical Simulation Of The Pollutant Transport Models In Shallow Water Flows Based On New Finite Volume Method, European Journal of scientific research, Vol.93 (2012), pp.151-162
- [12]- **K. Mohamed**, H.Shaban " Numerical Simulation Of The Sediment Transport Models In Shallow Water Flows Based On New Finite Volume Method , European Journal of scientific research, Vol.90(2),(2012), pp.196-211

[13]- **K. Mohamed**, H.Shaban " Numerical Simulation Of The Sediment Transport Models In Shallow Water Flows Based On New Finite Volume Method, International Journal of Applied Mathematics, 31(2013), Issue Number: 1,pp.96-112.

[14]- **K. Mohamed**, M.Seaid, M.Zahri " A Finite Volume method for scalar conservation laws with stochastic time-space dependent flux function , Journal of computational and applied mathematics 237(2013), pp. 614-632.

### **LIST OF CONFERENCES**

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[1]- **K. Mohamed** , F.benkhaloun, M.Seaid, " A Generalized Rusanov method for Saint-Venant Equations with Variable Horizontal Density ", Accepted for publication in FVCA-6, 2011, Prague,Czech Republic  
Technique

[2]- **K. Mohamed**, F.Benkhaloun and L.Quivy " A Finite Volume two steps flux scheme for 1D and 2D non homogeneous systems", FVCA-4, 2005, pp.423-434, Marrakesh

[3]- **K. Mohamed**, F.Benkhaloun and L.Quivy "A non homogeneous Riemann Solver to Simulate two phase flows", 18-22 April 2005, IGESA Proquerolles

[4]- **K. Mohamed**, F.Benkhaloun and L.Quivy "Numerical Simulation of non homogeneous systems ",Congrès d'analyse numérique , Strasbourg (2004)

## **RSEARCH PAPER S (IN PROCESS)**

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[1] Mahmoud A.E. Abdelrahman and **K. Mohamed** " Elementary waves, Riemann problem, Riemann invariants, new conservation laws and numerical method for the blood flow model" submit to journal The European Physical Journal Plus

[2] Mahmoud A.E. Abdelrahman and **K. Mohamed** " On the isothermal Euler model with non-vacuum initial data " submit to Journal of Mathematical Analysis and Applications

[3] **K. Mohamed** and S.sahmim " Numerical simulation of two-phase granular flows " submit to journal computer and fluid

[4] **K. Mohamed** and F.benkhaloun " Numerical simulation for a One – pressure model of two-phase flows using A new finite volume scheme" under preparation

[5] Mahmoud A.E. Abdelrahman and **K. Mohamed** " On the ultra-relativistic Euler equations " under preparation

## **TEACHING EXPERIENCE:**

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### **Courses taught at the Taibah University:**

- mathematical software
- Discreet mathematics
- numerical methods for PDE
- numerical analysis I and numerical analysis II
- linear programming
- algorithms and data structure
- computer graphics
- C++ and OOP language programming
- introduction to computer science

- analysis and design systems
- computational mathematics
- Calculus I, II,III
- introduction to statistics
- Introduction to mathematics
- Special functions
- Dynamical system
- Number theory
- Graph theory
- Special topics in mathematics
- Linear algebra

**Courses taught at Assiut University:**

- Computer Sciences
  - Essential Computer Mathematics
  - Programming Language (Basic, Fortran and C)
  - Analysis of Algorithms
  - Numerical Analysis
  - scientific computation
- **Trainer** at the Assiut University Information and Communication Technology Training project ( ICTP)

**1996-2000** Participant in a course in teaching techniques for Graduate teaching assistants at the sciences and mathematics department .

**FUNCTION ADMINISTRATIVE**

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- 1- Member at the Quality Assurance and Accreditation Project in Assiut University (New valley Faculty of Education) 2006-2008
- 2- Supervisor of a mathematical digital laboratory and computer class lab. and the Faculty of Education Network 2006-2008

- 3- Member at the Higher Education Enhancement Project (HEEP) 2006-2008
- 4- The coordinator of the College of Education in the New Valley at the Supreme Council of Universities in the project to develop colleges of education
- 5- Participate in the work of the exams through the control and control committees of the College of Education in the New Valley.
- 6- Supervisor of the ICTP project, College of Education, New Valley, 2006-2007
- 7- Member of the development committees of the College of Education of the New Valley in the Supreme Council of Universities
- 8- Supervisor of the electronic coordination office in the New Valley - Assiut University from 2006-2007
- 9- - Supervisor of the laboratories of the College of Education in the New Valley from 2006-2007
- 10- Supervisor of the Internet in the College of education from 2006-2007
- 11- Supervisor of the website of the Faculty of Education in New Valley from 2006-2008
- 12- Chairman of the Procurement Committee, College of Education in the New Valley from 2006-2007
- 13- Member of the Control Committees, College of Education, New Valley, from 2006-2007
- 14- Member of the organizing committees of the first conference of the College of Education (Education and Development in New Urban Communities)
- 15- Trainer in the ICTP project at Assiut University 2006-2008.
- 16- Supervisor of the video conference in the college of science, Taibah university 1436-1441



- 17- Supervisor of the mathematic department website, Taibah university  
1436-1441
- 18- Supervisor of the College of Applied Sciences website, Taibah  
university
- 19- Chairman of the committee equipment and laboratories, Taibah  
university, 1436-1441
- 20- Member of committee preparing the master of applied mathematics  
program at the college of science , Taibah university
- 21- Member of the committee preparing the Master of Pure Mathematics  
program at the College of Science, Taibah university
- 22- Member of the committee preparing the Bachelor of Mathematics  
program at the College of Science, Taibah university
- 23- Member of the committee preparing the Bachelor of Applied Science,  
branch computation Mathematics, college of applied sciences, Taibah  
university
- 24- Member in committee of teaching schedules, department of  
mathematics , college of science , Taibah university
- 25- Member in committee of graduation projects, department of  
mathematics , college of science , Taibah university
- 26- Member in committee of academic guidance , department of  
mathematics , college of science , Taibah university
- 27- Supervisor of the electronic services unit, college of science , Taibah  
university 1435-1436
- 28- Member of the Committee for the Third Standard for Academic  
Accreditation (Teaching and Learning) , department of mathematics ,  
college of science , Taibah university ,2019-2020
- 29- Vice-Chairman of the Sixth Standard Committee for Academic  
Accreditation (equipment and laboratories) , department of mathematics ,  
college of science , Taibah university 2019 -2020

- 30- Member of the committee preparing the self-study of the Department of Mathematics, college of science ,Taibah university 2017-2018
- 31- Member of the academic plan at Taibah University 2016-2017
- 32- Coordinator of the College of Science at the Deanship of E-Learning at Taibah University

**Course coordinator :**

- 1- Coordinator of the mathematical software course ,1437-1440
- 2- Coordinator numerical analysis , 1438-1439
- 3- Coordinator of linear programming , 1438-1439, 1440-1441
- 4- Coordinator of selected topics in mathematics 1438-1439

**WORKSHOPS AND SEMINARS**

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- [1]- The second symposium on chemistry, "Recent Trends in Chemistry", from 30 Safar to 1 Rabi 'al-Awwal 1436 AH, Faculty of Sciences, Taibah University.
- [2]- The female Higher Education Symposium for the Girl ( Trends and perspectives ) from 4 to 6 January 2010 at the Taibah University
- [3]- Attending the third scientific meeting in the College of Applied Sciences on 8 Jumada I 1430 AH
- [4]- Attending the workshop "How to start a small business" from April 21 to 23, 2008, at the Taibahu University
- [5]- Attending the panel discussion "Biotechnology - A Strategic View" on May 14, 2008 at the Faculty of Science, Thebes University
- [6]- Attending training in the Department of E-Learning in the use of educational forums, electronic libraries, virtual classes and the online channel for a period of three days, starting from 19 Jumada II 1432 AH , Taibah University

[7]- Attending the lecture entitled "Inspired Artificial Intelligence from Nature" at Computer Club at Taibah University on Rabi` Al-Thani 2, 1432

### **ATTEND TRAINING PROGRAMS :**

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- 1- Training program in effective communication skills from the Faculty and Leadership Development Center at Assiut University.
- 2- Training program in teaching evaluation from the Faculty and Leadership Development Center at Assiut University.
- 3- Training program in effective teaching from the Faculty and Leadership Development Center at Assiut University.
- 4- Training program in designing courses from the Faculty and Leadership Development Center at Assiut University.
- 5- Training program in modern directions in teaching from the Faculty and Leadership Development Center at Assiut University.
- 6- Training program for large numbers and small -teaching from the Center for Development of Faculty Members and Leadership Capabilities at Assiut University.
- 7- Training program in "Conflict Management at Work on 2/4/2019 from the Deanship of University Development at Taibah University.
- 8- Training program in "Preparing and Analyzing Tests on 3/4/2019 AD from the Deanship of University Development at Taibah University.
- 9- Training program in "Scientific Research Arbitration" on 3/13/2019 from the Deanship of University Development at Taibah University.

- 10- Training program in in "endnote" on 20/3/2019 from the Deanship of University Development at Taibah University.
- 11- Training program in "Program Report" on 26/3/2019 from the Deanship of University Development at Taibah University.
- 12- Training program in "Course Report" on 12/3/2019 from the Deanship of University Development at Taibah University.
- 13- Training program in "Models of teaching" on 27/3/2019 from the Deanship of University Development at Taibah University.
- 14- Training program in "Fundamentals of Effective Research in the Internet" on 8/4/2019 from the Deanship of University Development at Taibah University.
- 15- Training program in "ISHIKAWA Methodology for Problem Analysis" on 3/18/2019 from the Deanship of University Development at Taibah University.
- 16- Training program in "OSHA Occupational Safety and Health Standards for Evacuation in Emergencies" on 25/3/2019 of the Deanship of University Development at Taibah University.
- 17- Training program in "Data Analysis Using SPSS Program", Community College, Taibah University, over a period of four weeks, two days, two weeks, starting from 20 Muharram 1432 AH
- 18- Training program in "Digital Design and Image Processing in Adobe Photoshop CS5" from 21 Jumada I to 28 Jumada I at the Computer Club at Taibah University

### **INFORMATION SYSTEM**

- Languages: BASIC, FORTRAN 77 and 90., C, C++, OOP, Mathematica, MATLAB
- Operating systems : MS-DOS, Windows, Linux.
- Language general : Latex.

- Software : Microsoft Office (Word, Excel, Power Point, Database, information technology)

**LANGUAGES:**

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Arabic, English and French