

## Memorial of a Sudanese Scholar

*Prof. Mahjoub Obied Taha*

*(1937-2000)*

### Identification note

Prof. Mahjoub was born in 1937 in Eldewim town (a small town, 120 Kilometer south of Khartoum) where his family domiciled. His original home town is Elgitaina (70km south of Khartoum, on the eastern bank of the White Nile) He read for his Bachelor Degree in Mathematics in the University of Durham and the PhD in Cambridge. He distinguished himself in presenting the first relativistic generalization of Fadeev's Equations and by formulating Taha Sum Rule. Since then he became an outstanding professor in theoretical physics and won King Faisal Prize in physics.

Within the following pages details of the curriculum vitae of prof.Mahjoub will be provided.

This includes -

- 1-The academic career.
- 2-Achievements.
- 3-Scientific contributions.
- 4-Cultural and philosophical legacy.
- 5-Mahjoub's distinctive traits.

### **1- The academic career**

- (i) The pre-university education.
- (ii)The university and post – graduate education

#### **(i) The pre-university education -**

Mahjoub was a brilliant, outstanding student in all stages of his education, commencing in elementary school in Elgitaina in 1945 and up to the postgraduate doctorate in Cambridge in 1967. During the secondary school final exams he had always topped his class and was second to nobody. One thing which reflected Mahjoub's excellency was his participation in the Herald Tribune Forum in USA in 1956.The Herald Tribune

Forum aimed to provide an opportunity for the American high school students to get to know their peers from other parts of the world and to offer a chance for students from other parts of the world to tour the USA. For this purpose a competition was arranged among secondary schools and Mahjoub was the winner. His immediate reward was to be invited to the USA to participate in the forementioned forum. He travelled to the USA, attended the forum and when he was back he narrated his American experience in a series of talks for his Sudanese counterparts.

**(ii)The university and post –graduate education –**

In 1958 Mahjoub was admitted to the University of Khartoum, faculty of science (mathematics). By the end of second year (intermediate level) he scored the best results with honors and was given the best student-award in the final intermediate exam. He was offered a University of Khartoum scholarship in 1961 to complete his studies in physics at the University of Durham and got the degree of Bachelor of Science (mathematics) with honors in 1964 and additionally awarded the prize of the best graduate. In 1967 he obtained his PhD in physics at the University of Cambridge and consequently appointed a research fellow in Downing College, and was also selected as a research fellow in the Advanced Studies Institute in Princeton in USA. He spent one year there and returned to Sudan to join the University of Khartoum in 1968.

**2- Appointments and activities.**

- Lecturer, Reader and Professor of physics University of Khartoum until 1976.
- Appointed Dean of Faculty of Science, University of Khartoum in 1974.
- Professor of physics at King Saud University in Saudi Arabia since 1976 until demise in 2000.
- Research Fellow at Downing College in Cambridge in 1967.
- Fellow at the Institute for Advanced Studies in Princeton (U.S.A) in 1967.

- Appointed a research fellow at the World Center of Theoretical Physics in Trieste 1968(Italy).
- Member of the American Physical Society.
- Member of the Sudanese Atomic Energy Commission
- Member of University Councils at the Universities of Khartoum and King Saud.
- Represented the Universities of Khartoum and King Saud in many international conferences.
- Member of the editorial boards of several specialized scientific journals and editor of the journal of the Faculty of Science, King Saud University.
- Supervised several masters and doctorate degrees at the Universities of Khartoum and King Saud.

### **3- Scientific Contributions**

He presented the first relativistic generalization of Fadeev's Equations for three – particle collisions with three particles within the scope of the Scattering Matrix Theory. Discovered a new mathematical method called Taha's Method for analyzing the integrals on impulsive variables in electromagnetic interaction and weak interactions. He added a valuable rule to the Perturbation Theory and that addition was called, Taha Sum Rules . He proved the equivalence of two approaches to theoretical analysis in physics and elementary particles, the Equal – time Algebra and the light cone Commentators. He discovered with his colleagues in the theoretical group in Khartoum a new sum rule in the interaction of the proton – electron, within the framework of the issue of causality in the theory of elementary particles and achieved important results in the subject of renormalization group. He published more than sixty papers in famous international scientific journals.

#### **4- His cultural and philosophical legacy**

Mahjoub due to his deep faith in God was greatly attracted to the issues of science and creation, particularly the Cosmic Formation Theory. He delivered many lectures and wrote several articles on the philosophy of science, the concept of natural laws , the structure of scientific theories , the concept of time , the beginning of the universe , the scientific miracle of Koran and the consistency between faith and natural science .

The places , where these lectures were delivered included , university halls , social clubs , public forums and league of the Islamic World Courts . Journals and newspapers where articles were published included the following, The University Journal, Elfaisal , Science and Technology , Eladwa , Elyamama , Elmarifa and Afkar . He was an active participant in many national and international conferences.

#### **5- Mahjoub's distinctive traits-**

**-Professor Kamal Elhadi (30 year of companionship with Mahjoub) wrote:-**

“The first overwhelming virtue of Mahjoub is honesty. This had characterized all his life relations, the academic career, family life, colleagues, neighbours and students. Mahjoub was very candid in defending his beliefs and faith. He wrote a number of articles refuting agnostic scientist's arguments against the existence of God. He expressed his convictions and ideas in a very explicit manner with simple and unassuming language . He was very patient, forgiving, known for his genuine humbleness, modesty, self denying and preferred to work in silence. He was diligently concerned with time, a perfectionist and an achiever in all his engagements. He was not allured by job offers to join the research staff in reputable academic institutions such as Cambridge and Princeton Institute (USA). He was very generous, charming, lucrative and pleasant with every one, used to offer his knowledge, experience and advice to his colleagues, students and the public. He was keen to share his extensive knowledge in physics with his colleagues in the department of physics and

always gave full support for junior staff to pursue their career to the highest possible level. Mahjoub's most admirable character trait was his patience. He faced all the stages of the lung cancer he had with faith satisfaction . He persistently kept saying "I hope that Allah by offering me patience to tolerate the disease, might offer me a reward that I failed to attain with my work"

**Dr. Mohammed Elhassan Altikaena**

**References –**

- 1/ [https:// Sudan Now magazine.  
net/ page Arch. php? archYEAR=2019&archMonth=4&Id=652&type=new](https://SudanNowmagazine.net/pageArch.php?archYEAR=2019&archMonth=4&Id=652&type=new)
- 2/ wikipe. Mahgoub Obaid Taha  
Available: at wikpe. wiki/wiki/ar/
- 3/ Tasaworan Lilwogood -2016. A textbook in Arabic, containing articles written by Mahjoub and collected by Hantoub Secondary School graduates organization.  
Publisher – University of Khartoum Printing Press (K .U. P)

