

SABA SHAFaq

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WORK EXPERIENCE

INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD, PAKISTAN ASSISTANT PROFESSOR	2015-TO DATE
QUAID-E-AZAM UNIVERSITY, ISLAMABAD ASSISTANT PROFESSOR	2011 – 2012
SIEGEN UNIVERSITY, SIEGEN, GERMANY TEACHING ASSISTANT	2008 – 2010
GC UNIVERSITY, LAHORE LECTURER PHYSICS	2004 – 2007
NATIONAL ENGINEERING AND SCIENCE COMMISSION ASSISTANT MANAGER – PHYSICS	2001 – 2003

EDUCATION

SIEGEN UNIVERSITY, SIEGEN, GERMANY Ph. D. (Physics) Supervisor: Professor Dr. Thomas Mannel Thesis: Flavor Physics & Right-Handed Models	2007 – 2010
QUAID-E-AZAM UNIVERSITY, ISLAMABAD Master of Philosophy of Sciences (M.Phil.) Supervisor: Dr. Fayyaz Uddin Thesis Topic: Extension of Standard Model & Flavor Changing Processes	2000 – 2002
QUAID-E-AZAM UNIVERSITY, ISLAMABAD Master of Sciences (M.Sc.) As regular student with Physics (1 st Division)	1997 – 2000
PUNJAB UNIVERSITY, LAHORE Bachelor of Sciences (B.Sc.) As regular student with Maths A&B/Physics (Roll of Honor)	1995 – 1997
FEDERAL BOARD OF INTERMEDIATE SECONDARY EDUCATION ISLAMABAD Higher Secondary/Intermediate Examinations (F.Sc.) As regular student with Pre-Engineering Majors (1 st Division)	1993 – 1995
FEDERAL BOARD OF INTERMEDIATE SECONDARY EDUCATION ISLAMABAD Secondary School Examinations (Matriculation Examination) As regular student with Science Majors (1 st Division)	1991 – 1993

RESEARCH INTERESTS

- i: Interested in the study of B-decays in and beyond Standard Model. Specialized in field of effective theories (limiting cases of full QCD theory) specially heavy quark effective theory and the soft collinear effective theory, helps to study the behavior of some interaction towards the end of phase space. Calculating symmetry breaking corrections to relevant form factors to get a better insight and improved results for decay cross sections.
- ii: Study of left right symmetric models, Extension of gauge sector of Standard Model to explain the mass hierarchy among three quark families in collaboration with research group working in University of Siegen, Germany under the supervision of Prof. Thomas Mannel. Such models are important for the study of phenomenology of elementary particles.
- iii: Study of B-decays using the techniques beyond Standard Model taking into account new physics parameters. Especially Model Independent study of different decays containing B-mesons in collaboration with the high energy research groups working in Quaid-e-Azam University and National Center of Physics Islamabad.

PUBLICATIONS

- i: Ishtiaq Ahmad, M. Jamil Aslam, M Junaid, Saba Shafaq. Model independent Analysis of $B \rightarrow K_2 \mu^+ \mu^-$ decay. Journal of High Energy Physics, Volume 2012, Number 2(2012), 45 ODI: 10/1007/(JHEP02(2012)045).
- ii: T. Feldmen, Prof. T. Mannel, Saba Shafaq. Left right models with additional U(1) symmetry. (In process of submission)

TEACHING EXPERIENCE:

Possess vast experience in teaching not only the core Physics courses but also the specialized courses require to help research at MS and PhD levels. During the tenure 2004-2007 in Govt. College University Lahore have been teaching Classical and Statistical Mechanics to M.Sc. students along with supervising undergrad student in their lab courses.

During stay in Germany, have been taking problem classes of the international M.Sc. student for courses of both Statistical and Advanced Quantum Mechanics thus having valuable experience teaching with world renowned professors.

After returning home engaged in teaching for almost two years in Quaid-e-Azam University.

The courses taught at QAU were Nuclear Physics, Particle Physics and Mathematical Methods of Physics to M.Phil. students. Co-supervised three M.Phil students at QAU in completing their research work, writing thesis and conducting their final viva exam held in Physics department.

Associated with International Islamic University since February 2013 as visiting faculty and had been teaching courses of Statistical Mechanics, Special Theory of Relativity and Classical Mechanics.

Before these teaching jobs, had a unique experience of running a lab in National Engineering and Scientific Commission, Islamabad (NESCOM) for almost three years involving high tech instruments.

REFERENCES

- Professor Dr. Thomas Mannel (Department of Theoretical Physics, Siegen University, Germany)
- Professor Dr. Hans D. Dahmen (Department of Theoretical Physics, Siegen University, Germany)
- Professor Dr. Fayyaz Uddin (Quaid-e-Azam University, Islamabad)