



THE UNIVERSITY OF  
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Department of Physics and Astronomy  
Lewis Hall  
Post Office Box 1848  
University, MS 38677-1848  
Phone: (662) 915-5611  
Email: datta@phy.olemiss.edu  
Fax: (662) 815-5045

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To Whom It May Concern:

I have known Mr. Ahmed Rashed for four years. He is at present pursuing a Ph.D. degree under my supervision in the area of High Energy Theory at the University of Mississippi. Mr. Ahmed is among the best graduate students that we have had in our department of Physics and Astronomy. He is clearly the best graduate student among our present graduate students. He has an excellent background in physics and has performed very well in his course work including a course in Quantum Field Theory taught by me. He is among the few students in the history of our department who passed the Ph.D. comprehensive exam very early and in their first attempt.

Mr. Ahmed started research with me in spring 2010. He has worked on several projects in various areas of particle physics phenomenology. In the first project he worked on the decays of the newly discovered particle  $\eta_b$ . In this work, published in Physical Review D, we showed how the measurement of the decay of this particle into tau leptons could reveal the existence of a light pseudoscalar or an axial vector state. In the second project we completed a calculation on the Top Forward Backward Asymmetry that appeared in Physical Review D. In this paper we calculated the Top Forward Backward Asymmetry in a model with the most general flavor changing  $Z$  coupling constrained from measurements in the  $B$  system.

Currently, Mr. Ahmed is working on the topic of Neutrino Physics. We have published a paper in Physical Review D on a TeV scale model for neutrino masses that can explain the recent non-zero measurement of the reactor mixing angle. Ahmed has completed work on a variation of this model which yields the tri-bimaximal mixing as the leading order neutrino mixing. This work has been sent for publication. Recently he completed a project involving non-standard interactions in the tau sector. In particular, we looked at the corrections to the atmospheric and reactor mixing angles from charged Higgs and  $W$  contribution in  $\nu_\tau$  and  $\bar{\nu}_\tau$  nucleon scattering at the detector. We have sent this work for publication to Physical Review D. He has completed a project with Prof. Ernest Ma at the University of California, Riverside on a model of neutrino masses and mixing with non-zero  $\theta_{13}$  and necessarily large leptonic  $CP$  violation allowing the three cases of mass hierarchies. They used the scotogenic mechanism in the model and introduced the non-Abelian discrete symmetry  $A_4$ . The paper has been published in the Int. J. Mod. Phys. A. Ahmed is also working

on another project with Prof. Ma and on his own on a model of leptonic mixing based on  $SO(3)$  symmetry.

Mr. Ahmed assisted me in teaching a course in Quantum Mechanics. He taught a few classes while I was away. He presented his lectures in a clear and organized way and got positive feedbacks from the students in the class.

Mr. Ahmed is an extremely hard worker and is strongly motivated to succeed. He is a quick learner and has a sound background in quantum field theory and group theory. He is a pleasant person who gets along very well with his professors and his fellow students. Mr. Ahmed has, I believe, all the qualities of a very promising researcher in high energy theory and I strongly recommend him for the position offered in your place. Should you require any further information or assistance in this matter, please do not hesitate to contact me.

Sincerely.

A handwritten signature in black ink, appearing to read 'A. Datta', with a stylized, cursive script.

Dr. Alakabha Datta  
Assistant Professor  
Dept. of Physics and Astronomy  
University of Mississippi  
University, MS 38677  
Email: datta@phy.olemiss.edu