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Subject : Recommendation Letter for Suprabh Prakash

Dear Sir/Madam,

It gives me great pleasure to write this recommendation letter in support of Suprabh Prakash's application for a post-doctoral position at your Institution. I know Suprabh for the last one and half years and hold high regard for his research abilities.

I have collaborated on two papers (arXiv:1208.3644 [hep-ph] and arXiv:1301.2574 [hep-ph]) with Suprabh. NO ν A experiment has reoptimized its event selection criteria in light of the recently measured moderately large value of θ_{13} . In arXiv:1208.3644 [hep-ph], we have studied the physics reach of the reoptimized NO ν A (in conjunction with T2K) to determine the mass hierarchy and leptonic CP violation. This paper has been published in Journal of High Energy Physics [JHEP **1212**, 075 (2012)]. During this collaboration, I was very impressed by Suprabh's detailed knowledge on the nitty-gritty of the upcoming NO ν A and currently running T2K experiments. He did 50% of the numerical work for this paper and also took active part in physics discussions and during the paper writing stage. He knows the GLoBES software quite well which simulates the long baseline neutrino oscillation experiments. He showed an eye for details and read the manuscript very carefully and gave very relevant suggestions and was always striving for the betterment of the presentation.

Preliminary results of MINOS experiment indicate that θ_{23} is not maximal. Global fits to world neutrino data suggest two nearly degenerate solutions for θ_{23} : one in the lower octant (LO: $\theta_{23} < \pi/4$) and the other in the higher octant (HO: $\theta_{23} > \pi/4$). In our recent work (arXiv:1301.2574 [hep-ph]), we have explored the prospects of T2K and NO ν A long baseline neutrino experiments to resolve the octant of 2-3 mixing angle in the neutral lepton sector. Suprabh has played a vital role in the numerical simulation for this project. During our discussions, I was quite impressed with the way he explained the physics that was depicted by the

plots that he prepared and he was always eager to listen to others as well. We have submitted this paper in Journal of High Energy Physics .

He has also done a study on the physics potentials of the “Bimagic” 2540 km long baseline superbeam experiment. This work, done with his collaborators, was very well received. I had few discussions with him about this work. I observed during the discussions that his understanding was quite clear and he answered all my queries.

He can come forward and talk to people and can take part in discussions and has always shown the interest to collaborate with others. He always keeps himself up-to-date with the latest developments in the field.

Suprabh has acquired the expertise on the basic skills required to work on neutrino phenomenology. Based on my interactions with him during the paper on which we collaborated and also during the ongoing work and his performances during the seminars that he gave in my presence I feel that he is a competent physicist who can do well in competitive atmosphere. He has strong determination, is hard working and has immense drive and has shown the trends of becoming a successful physicist. He is also very polite, and has a contagious enthusiasm about his work. He can work independently and in groups and can be a valuable addition to any group.

I recommend him very strongly for a post-doctoral position at your place.

With best regards,

Yours sincerely,
Sanjib Kumar Agarwalla