

PHYSICAL RESEARCH LABORATORY

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Recommendation letter for Bhavik Kodrani, T.I.F.R., Mumbai, India

This is a letter of recommendation for Dr. Bhavik Kodrani, my former Ph. D. student, for a post-doctoral position. I started interacting with Bhavik when he was doing a small project on solar neutrinos as a part of the graduate courses in our laboratory. He came from a modest background and had no prior knowledge of particle physics at that time. He made quick progress in understanding various aspects of neutrino oscillations and I selected him subsequently as a Ph. D. student. He has not disappointed me during his studies. He has learnt many new things and done substantial amount of research.

Bhavik worked on different versions of two Higgs doublet model working out phenomenological consequences of these models for B physics. He acquired significant knowledge of standard model and phenomenology of CP violation in the course of these studies. There are three new sources (flavour changing neutral currents, charged Higgs couplings and scalar pseudo-scalar mixing) of CP violation within general 2HDM. He has analyzed implications of each of these as a potential source of new physics in the $B^0 - \bar{B}^0$ mixing and worked out details within specific illustrative models and also in a model independent manner. Each study is exhaustive and required significant numerical work, in particular numerical minimization involving many parameters. Bhavik has been an active collaborator in these works.

In addition to this, Bhavik was also involved in a detailed investigation of fermion masses within an $SO(10)$ model with approximate μ - τ symmetry. This work was along with my other student Ketan Patel who had just joined and Bhavik's help in the numerical study was quite crucial for the progress of the work.

Bhavik is presently working as a post-doctoral fellow with Prof. Amol Dighe. He has used his knowledge and skills in a very detailed studies of possible explanation of difference recently seen in the CP asymmetries in D^0 decay into K^+K^- and $\pi^+\pi^-$.

Bhavik tries to understand details of various aspects of any work he takes up even if it takes somewhat longer time. He likes complicated numerical calculations and he is well versed in this. He has gained substantial knowledge of topics in neutrino physics, B physics and grand unified theories. He would be very useful co-worker in study of problems related to these fields. In addition, he is also capable of working on new problems in a group. He is very quiet but collaborates well with people. I am sure that he will have opportunity to grow in a suitable environment and contribute meaningfully to research activities of the group. I am very happy to recommend his application to you.

Anjan S. Joshipura