

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

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Letter of recommendation for Sunando Patra

Sunando Patra is a graduate student in the University of Calcutta, working with Prof. Anirban Kundu in the area of flavor physics. In particular, his PhD work is focused on the study of CPT violation in B systems. I have been his collaborator in one of his papers on this topic, and have met him at a few conferences.

Our work together – which also involved my student Diptimoy Ghosh, and the advisor of Sunando – analyzed whether CPT violation in B_s - \bar{B}_s mixing can help explain the like-sign dimuon anomaly as well as the measurements of lifetime difference and CP phase from $B_s \rightarrow J/\psi\phi$ decay. We developed a formalism to test this hypothesis, which finally ended up showing that it is the absorptive part of B_s - \bar{B}_s mixing amplitude that is crucial for the resolution of this anomaly, and only CPT violation is not enough. The analytical formalism developed in this paper was a natural progression from an earlier paper by Sunando, and he took care of most of the numerical calculations too.

My interactions with Sunando have been rather limited, so I shall not be able to give details about his abilities (for that you may see the letter from his advisor), however I have heard clear talks given by him, and he comes across as enthusiastic and motivated. He is in the last year of his graduate studies, and I think that he still needs some initial guidance before becoming an independent researcher.

I would like to recommend Sunando for a postdoctoral position in high energy physics (especially flavor physics), where he can be mentored in the initial stages.

Sincerely,

Prof. Amol Dighe

Department of Theoretical Physics

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