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Dear Colleagues

This is a recommendation letter in support of the application of **Avelino Vicente** for a post-doctoral position in theoretical high-energy physics in Your group.

I have known Avelino Vicente since the Fall of 2011 when he joined my group for a two-year position under my supervision. This position is funded by the National Agency for Research (ANR) under the project “Lepton Flavor Violation, CP Violation and Collider Signals: Complementarity of Direct and Indirect Searches of New Physics scales”.

We have already collaborated on several subjects related to lepton flavour physics (LFV) and direct searches for new physics at the LHC and in high-intensity experiments.

In our first joint project, Avelino was actively invested in the study of a peculiar feature of the minimal supersymmetric inverse seesaw: the non-minimal particle content of the model opens the door to dominant Z-penguin contributions to three-body and semileptonic decays (of mesons and charged leptons) as well as to neutrinoless conversion in muonic atoms. Interestingly, in this framework, the contribution from the Z-penguins exhibits a non-decoupling behaviour rendering it insensitive to the the right-handed neutrino masses and to the supersymmetric scale (JHEP 1209 (2012) 015, arXiv:1206.6497 [hep-ph]). These features deserve a careful dedicated study in a model independent approach and it is part of our research project for the upcoming year.

Very recently, we have been working on a model independent study (effective approach) of LFV observables related to semileptonic decays of kaons (R_k).

In these projects, I should mention that Avelino came up several times with new original ideas, concerning technical methods to solve problems and finding new aspects of them. Throughout our work, he actively participated in the analysis and was critical in the discussions, very often taking initiatives. In all occasions, I have found that Avelino has a deep understanding of his research work which he explains very clearly.

In addition, I listened to his talks at several occasions and meetings (Madrid, Orsay, Journal Club). I can witness that his presentations and seminars are extremely well organised and very clear.

During his first year in the laboratory, he initiated numerous discussions and scientific exchanges with several people (permanents, postocs and Ph.D students). He has shown a great interest on the different subjects, demonstrated a high capacity of work and the ability to solve problems in an elegant way. He was able to rapidly get acquainted with new fields and methods as you can see from his publication list.

He participates actively in the research activities of the laboratory (LPT), giving presentations and animating the Monday Journal Club. At present, he is the main organiser of the weekly particle physics seminar of the laboratory and he does the job remarkably well.

I find Avelino Vicente to be an extremely devoted and promising young researcher. He is autonomous and independent, he works very hard, he is very competent with analytical calculations and with numerical work when required.

In addition to being extremely focused and competent in his research domain, Avelino is also interested in other topics. He has a lot of physical intuition and aims towards a goal with a very logical reasoning.

In summary, I have a very high opinion of Avelino Vicente's ability as a researcher. I believe that he has the necessary maturity with a very good background and many interests in Particle Physics. He is reliable and capable. He would bring new strengths to any research group. Finally, I find that Avelino has a very engaging personality, both friendly and polite, and it is a great pleasure to work with him.

I therefore most strongly recommend his application for a postdoctoral position in Your Group. (In all truth, had I succeeded to extend the duration of his contract, I would have been extremely pleased to pursue working with him!)

Do not hesitate to contact me directly for further comments.

Yours sincerely,

Asmaa Abada

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