



*Object : Application of Mohamed Sadek Zidi to a post-doctoral position*

Annecy-le-Vieux, 14 January 2013

### LETTER OF RECOMMENDATION FOR MOHAMED SADEK ZIDI

I first met Mohamed Sadek Zidi, when I was teaching a Magistere course at the Université de Jijel, Algeria. This cursus was at the level of a Master2 in Europe. My course was on Field Theory and applications. In this rather intensive course delivered in a short time, the perturbative renormalisation (at one loop) of QED and QCD as well as some phenomenological applications were presented. The final exam was given about two weeks after the end of the course.

Mohamed Sadek Zidi actively followed these lectures, not hesitating to go to the blackboard to solve exercises. He took part in the final exam and got, by far, the best grade (15/20). His solutions to the examination problems showed that he understood in depth the content of the lectures, and that he also acquired the techniques necessary for carrying out practical calculations in a very short time. My extremely favourable opinion about him is corroborated by the fact that he also obtained the best grade in the other courses (Weinberg-Salam model, Group Theory) given by my colleagues of LAPTH. These results are perfectly in line with previous results of M. Sadek Zidi who was constantly the first of his class during all his academic career, whether at the Université de Biskra or the Université de Jijel.

What is impressive about M. Sadek Zidi is that he could digest an intensive course on Quantum Field Theory and applications so fast and obtain very good results, comparable to some of the best students following the elite Master2 of Ecole Normale Supérieure de Lyon where I taught several years back. Besides his fast learning and understanding he showed very strong technical abilities to solve problems. M. Sadek Zidi was also extremely motivated and keen to learn new topics, this is why we invited him in 2009 for a 2-month internship at LAPTH and again in 2010 so that he could complete his Magistere thesis which the students had to prepare in one year.

During his stays at LAPTH he started to initiate himself to the intricacies of loop calculations for multileg diagrams and he has shown a great ability in this very technical field. Anxious to develop his knowledge on phenomenology he took part in the CERN Summer Student program (analysis of top quark pairs in ATLAS based on multivariate analysis techniques) in 2009 and in the DESY Student Program ( $\alpha_s$  determination from DIS data) in 2010, in both cases with the financial support of

these institutions. In both cases he did a very good job. He then joined LAPTH as a Ph.D. student working on one-loop multileg diagrams, finding one-dimensional integral representations avoiding the very annoying Gram determinant problems. His Ph. D. supervisor, Jean-Philippe Guillet, will tell you more about the achievements in this domain. Besides his interest in loops he recently started to work a more phenomenological problems where he can apply his knowledge on loops.

Besides his research activities, he also leads exercise and laboratory sessions for undergraduate physics students at the Université de Savoie and the associated Engineering School, and he is very appreciated in these duties.

Mohamed Sadek Zidi is very gifted and he showed, by his research work, that he has very high technical qualities. Unfortunately no publication have yet appeared due to the nature of his project but a couple of papers are in preparation. He is also very curious to learn a broad range of topics. He is extremely motivated and he has a very pleasant personality. He has clearly shown that he has all the qualities to continue to be a first class physicist.

Therefore I very strongly recommend him for a post-doctoral position in your laboratory.



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