

5 june, 2018


Dear Selection Committee:

This is a letter in support of the application by **Javier Alvarez-Jiménez** to participate in the conference Mathematical & Conceptual Aspects of Quantum Theory .

Let me give you some more background information on Javier. I met him for the first time four years ago during his studies on M. in Sc. Physics at the University of Mexico. He was an excellent student, in the courses of Quantum Field Theory that I gave in the University. From these courses, it was quite clear to me that he has an excellent understanding of basic physics. After that, he developed his M. in Sc. thesis under my supervision, about the Quantum Fidelity in non commutative and relativistic systems. From these studies we found that the fidelity is gauge dependent and we write an article about this subject, Gauge Invariance, the Quantum Metric Tensor and the Quantum Fidelity, J. Mod. Phys. 7 (2016) 1627-1634. Javier is now working in his Ph. D., and I consider that the conference Mathematical & Conceptual Aspects of Quantum Theory is an excellent opportunity for Javier to learn more about Quantum Information and apply this information to his PhD. Also, we have another article, Quantum Information metric and Berry curvature from a Lagrangian approach JHEP03(2017)044, where we proof that the Berry curvature and the quantum information metric, can be obtained from correlations functions in quantum mechanic and field theory. He will present an extension of this work in the conference.

Furthermore, from my regular interaction with Javier, I have a very good impression of him; he has a powerful ability to absorb new knowledge and also to contribute to the research project that he works. Javier is passionate about theoretical physics; he is hardworking and focused. Furthermore, Javier is an extremely friendly and approachable person. He is always very open to discussions and generous with his time.

Yours sincerely,



Prof. J. David Vergara  
Head of High Energy Physics Department  
Nuclear Science Institute  
National University of Mexico  
vergara@nucleares.unam.mx

