



Application letter to IDPASC

Dear Prof. Bertrand Laforge,
IDPASC Coordinator

We are glad to present the following application letter for the Federal University of Bahia (UFBA) to join the International Doctorate Network in Particle Physics, Astrophysics and Cosmology (IDPASC).

UFBA has been contributing to theoretical and experimental aspects of particle physics by joint efforts of researchers from the Physics Institute and the Electrical and Computer Engineering Department (Polytechnique School).

Since 2023 UFBA has been a member institute of the ATLAS Experiment at the LHC/CERN, as part of the ATLAS-Brazil Cluster and there are several undergraduate, M.Sc. and Ph.D students currently working on experimental related topics. In the past, some UFBA researchers have contributed to the Neutrinos-Angra Experiment, a Brazilian initiative for neutrinos detection at the Angra II nuclear power plant. There are also UFBA researchers that are members of Pierre Auger Collaboration and of E-831 Experiment at Fermilab.

On theoretical side, UFBA has also an active group in particle physics phenomenology dedicated to advancing the frontiers of particle physics, mainly working with effective field theories that are used for global fits (based on machine learning techniques) in the search of beyond standard model physics, and for the study of heavy and exotic hadron physics. It should be mentioned that this group is home to undergraduate, M.Sc. and Ph.D. students.

In addition, the cosmology group at UFBA has been working on cosmological models with interaction in the dark sector, and testing them with the main astronomical observations, such as type Ia supernovae, cosmic microwave background (CMB) and structure distribution. The projects developed by this group include the participation in the J-PAS Collaboration, and involve a number of graduate and undergraduate students.

We are grateful for your consideration of UFBA's application for being an IDPASC member. We believe that our students will very much benefit from the participation in schools of the IDPASC. UFBA researchers are also motivated to join IDPASC and contribute to this important international network.

Salvador, September 12th, 2024.



Paulo Cesar Miguez de Oliveira
Reitor