



PhD in Physics



deadline for applications:

May 24th, 2021, 4PM CET time

the interviews will be held from 3 to 10 of June

scholarships available on the ATLAS project

Study of the Higgs boson and its decays into b-quark pairs at the ATLAS experiment at the Large Hadron Collider (scholarships O-P)

The candidate will have to consolidate his/her background in experimental particle physics and data analysis, becoming proficient in multivariate analysis and machine learning techniques. He/she will later join the DEEPPP initiative in Trento and the ATLAS collaboration, to focus on Higgs to bb pairs analyses, learning to work in small to large-size groups, and profiting from connections from all around the world. The candidate will spend his/her research time in Trento and at CERN. At the end of the Programme, the candidate will have solid background in high-energy physics and its applications, being ready to pursue career both in research institutions and in data analytics companies.

R&D of an advanced flexible interconnection solution suitable for high-energy physics experiments (scholarship Q)

Tape Automated Bonding (TAB) is an electrical connection technique of microelectronic chips designed to solve, by simplifying, complex bonding situations, such as those in which there are large numbers of connections to the chips. The TAB is based on flexible conductors laminated with a flexible dielectric that offers support to the numerous conductive tracks and are generally made of Kapton-Copper. This project plans to develop an innovative technological packaging solution for the production of flexible conductors in Polyimide-Aluminum with the possible use also as a leadframe for the integration of flexible printed circuits. The project activities include the study of a technological solution of surface activation for the coupling between dielectric and aluminum, the analysis of the junction and mechanical adhesion of the two layers. In a second phase, microfabrication processes necessary for the creation of the slopes by photolithography will be designed and chemical etching tested. The flex cables thus produced will be characterised and used as baseline for multilayers development. The project will be conducted in collaboration with INFN initiatives pursuing experiments (ATLAS) or developing next-generation silicon sensors (ARCADIA).

Please contact **at your earliest convenience** Prof. R. Iuppa (roberto.iuppa@unitn.it)

Trento is a beautiful city to live in and its University is top-ranked in Italy.
13.6k€ gross/year + 1.6k€/year lodging

