Curriculum Vitae of Dr. Alessandro Menegolli

2001–2002 Degree in Physics from the University of Padova (Italy) with a thesis on "The HARP experiment time of flight system". He works on the realization and characterization of the palisade of scintillation counters for measuring the time of flight in the HARP PS214 experiment at CERN in Geneva. HARP is one of the R&D experiments planned in view of the design and construction of a Neutrino Factory at CERN. HARP has measured cross sections from hadronic interactions of protons and pions with momentum between 2 and 15 GeV/c on various nuclear targets.

2003–2006 PhD in Physics from the University of Pavia (Italy). Thesis on "Study of the low energy and intermediate energy electron samples with the ICARUS T600 detector". During his PhD he participates in an experiment aimed at detecting neutrinos and other rare events at the National Laboratories of Gran Sasso of INFN: ICARUS T600. This is a cryogenic detector that uses the principle of the time projection chamber for the detection, tracking and energy reconstruction of ionizing events in liquid Argon. He works on the development of a software for viewing and analyzing events selected from the data collected by the ICARUS detector in Pavia in 2001.

2006–2007 Within the research project PRIN 2005 "Large area detectors for scintillation photons in liquid Argon", he takes part in the feasibility study of a large area photo-sensitive detector capable of operating in a liquid Argon time projection chamber. He participates in the development of a prototype detector that uses the multiplication of electrons in gas, operating at liquid Nitrogen temperature.

2007–2013 As a member of the ICARUS Collaboration, he takes part in the activation of the ICARUS T600 detector at the National Laboratories of Gran Sasso. Among the activities of which is a participant there are: the activation of the slow control system for the photo-multiplier tubes used in ICARUS for the trigger and timing of events; the realization of a system to monitor the temperature and the level of liquid Argon during the commissioning of the detector; the realization of the vacuum system used for the evacuation of the detector; the participation in the commissioning phases of the detector. Since May 2010 he participates in the data taking of the ICARUS T600 detector, and he works on the analysis of the events of neutrino interaction coming from the CNGS neutrino beam from CERN to Gran Sasso. He also collaborates to the feasibility study of new detectors exploiting the technology of the liquid Argon time projection chamber, for the physics of the neutrino oscillations, for the measurement of the still unknown parameters involved in the mixing matrix of the neutrinos, and for the detection of rare events such as the nucleon decay.

2011– He wins a university research position for the SSD FIS/04 and he takes service as Ricercatore Universitario non Confermato at the Department of Physics, University of Pavia (Italy).

2014– As a member of the ICARUS Collaboration, he participates in the refurbishing at CERN of the ICARUS T600 detector (WA104 CERN experiment), in view of its movement to Fermilab USA laboratory. The goal is the use of the T600 detector as a far detector of the Short Baseline Neutrino (SBN) experiment for sterile neutrino searches with the Fermilab low energy Booster Neutrino Beam. He collaborates on the design and realization of the T600 new scintillation light detection system based on large window area cryogenic Hamamatsu PMTs, which are used for trigger and timing purposes. He is also studying the cosmic rays role in affecting the ICARUS T600 detector performance due to its shallow depths operation.

2014– He starts working on the FAMU experiment as the lead of the Pavia INFN group. The goal is the determination of the Zemach proton radius through muonic hydrogen hyperfine splitting measurements at the RIKEN-RAL facility muon beam. His participation concerns the study and characterization of new scintillating crystals (Pr:LuAG) to be used in FAMU as X-ray detectors. He also collaborates on the realization of the muon beam monitor, realized with scintillating fibres read by arrays of SiPMs.

THESIS SUPERVISOR:

2012 Supervisor of the Physics Master Degree thesis of Dr. Marta Torti, with the title: "Analysis of ionizing events from CNGS beam in the ICARUS T600 detector".

2012 Supervisor of the Physics Bachelor Degree thesis of Matteo Moroni, with the title: "Phenomenology of neutrino oscillations".

2013 Supervisor of the IUSS thesis of Dr. Palo Agnes, with the title: "The Darkside experiment in the context of the direct search for Dark Matter".

2014 Supervisor of the Ph.D. thesis of Dr. Andrea Zani, with the title: "Development and Operation of Large Volume Liquid Argon Detectors for Rare Event Detection".

2015 Supervisor of the Physics Master Degree of Dr. Tommaso Cervi, with the title: "Characterization of SiPMs at cryogenic temperatures, in view of the realization of a scintillation light detector in liquified noble gas TPCs".

2015 Supervisor of the Ph.D. thesis of Dr. Andrea Falcone, with the title: "Studies and tests for the new light collection system of the ICARUS T600 detector".

2016 Supervisor of the Ph.D. thesis of Dr. Marta Torti, with the title: "Effects of electric and magnetic fields on the event reconstruction in the ICARUS T600 detector".

TEACHING:

2004–2006 he performs teaching activities at the University of Pavia (Italy), doing tutoring and assistance for various courses of General Physics.

2006– he is assistant and tutor for the course of Physics 1 for the Bachelor of Mathematics.

2012– 2014 he is assistant and tutor for the course of Physics 1 for the Bachelor of Physics.

2013– he is responsible of the course of Laboratory of Nuclear and Subnuclear Physics II for the Degree in Physics.

2014– 2016 he is responsible of the course of Electrical Measurements for the Bachelors of Radiology and Neurophysiopathology Technicians.

2015– he is responsible of the course of Medical Physics for the Bachelor of Nursing.

2015– he is responsible of the course of Medical Physics for the Bachelor of Midwifery.

SERVICE CHARGES:

2014– Lead of the Pavia group of the FAMU INFN experiment.

2014–2015 Representative of Pavia INFN researchers.

2015– He is designed as Coordinator of INFN Pavia within the INFN Commissione Scientifica Nazionale II.

Pavia, 12th May 2017

Alessandro Menegolli