Pier Simone Marrocchesi

Born in Siena (Italy). Degree in Physics at University of Pisa (cum laude); Ph.D in Physics at Scuola Normale Superiore di Pisa (cum laude); RA at WestField College (London) for one year. Member of the research staff of INFN (Istituto Nazionale di Fisica Nucleare) in Pisa from 1983 to 1992. Research Fellow of the EP division at CERN for 3 years; Associate Professor (1992); Professor of Physics since 2002.

Director of the Ph.D School in Experimental Physics at the University of Siena till 2020; Chair of the Department of Physical Sciences, Earth and Environment since November 2021.

Co-author of more than 350 papers, his research activity in experimental High Energy Physics started in the late seventies. At that time, he co-authored the measurement of the e.m. form factor of the charged pion with the NA7 experiment at the CERN-SPS (the subject of his Ph.D thesis) and the photoproduction of charmed mesons with NA1. One of the promoters of the ALEPH experiment at LEP for the experimental test of the validity of the Standard Model of the Electro-Weak interactions, he played a major role in the development of the Aleph Time Projection Chamber. He also contributed to the study of the Z decays into lepton pairs, the tau decay modes and the search for the charmed baryon Ξ_C. In the mid-nineties, he participated in the project studies on CP violation in B decays with the BaBar experiment at Stanford (SLAC).

His research activity in Astroparticle Physics started with the AMS-02 experiment on the ISS where he took part in the development of the Pb/Sci-Fi electromagnetic calorimeter with the INFN Pisa group. He then proposed and coordinated the INFN participation in the balloon experiment CREAM for the measurement of the energy spectra and elemental composition of charged cosmic rays in a series of balloon flights from Antarctica, in collaboration with NASA. He participated in the Antarctic campaign for the first flight and directed the construction and commissioning of the W/SciFi calorimeter built by INFN for the second flight.

Principal Investigator of several R&D projects for the development of high energy and astroparticle physics instrumentation including pixelated silicon sensors for the charge identification of ultra-relativistic ions; large dynamic range and low power front-end electronics; high energy calorimetry for space experiments; ionization and Cherenkov detectors readout by Silicon Photomultipliers (SiPM); avalanche CMOS thin sensors. He coordinated for 6 years the Gruppo Collegato of Siena operating with INFN-Pisa.

At present, he is the Principal Investigator (PI) of the Italian participation in the Calorimetric Electron Telescope (CALET) experiment, member of the International Executive Committee and co-PI of the CALET collaboration. CALET, funded by the Italian Space Agency (ASI), is in operation on the International Space Station (ISS) since October 2015 carrying out direct measurements of high energy cosmic-ray fluxes, dark matter searches and observations of high-energy gamma-rays and GRBs. CALET is an international collaboration funded by JAXA, ASI and NASA with a strong participation of scientists from Italian universities and IFAC/CNR.