

# Curriculum Vitae

Sergio Ballestrero

First name: Sergio

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Marital status: Unmarried

State of health: Good

Military Obligations: None

## 1 Studies

autumn 1988 Commenced studies at the Physics Faculty of the University of Firenze, Italy.

summer 1993 Summer Student at the CERN L3 collaboration. The work consisted mostly of the realization of off-line software for the identification of signal clusters in the silicon microvertex detector. Furthermore, the project involved the analysis of resulting data. The results of which were presented at the L3 Workshop, since they constituted the first off-line evidence of signals from the detector.

During the same period, I also had a chance to contact the NA43 experiment, and helped to setup and tune a silicon detector.

summer 1994 Participated as an INFN associate in the CERN NA43 experiment for the period of beam time.

1994 - 1995 In addition, I developed a new on-line software for analysis of NA43 data, to replace the previous custom one: the system, written in C and Fortran77 leveraged the CERNLIB software package, using HBook for data storage. The standard CERN PAW data analysis program could thus be used for interactive analysis. I also analysed NA43 data on showers in thick crystals.

1995 - 1997 In the subsequent two years, continuing on the ongoing data analysis and the participation to beam-time work at CERN, I started the realization of the GEANT simulation of the NA43 experiment. In 1996, as a result of my civil service obligations, i could only obtain a special permission to participate (for a limited period) in CERN activities.

1998 - 2000 In late 1998 I began a collaboration with the NA59 CERN experiment, helping to prepare the DAQ software and the detectors setup for the run in spring 1999. I also wrote the data reduction program for NA59, in C++, and coordinated the adapting of my NA43 GEANT simulation to the new experiment. I am currently continuing the work on NA59, as a CERN Technical Student, mostly on data analysis, enhancing the existing software, and preparing for a switch to a fully Object Oriented analysis system.

## 2 Working experience

autumn 1995 Invited to offer technical assistance at the Schonland Research Centre, University of the Witwatersrand, Johannesburg, to help upgrade the data acquisition system used for the tandem accelerator experiments. My main responsibility was to write a C++ code for data readout from a CAMAC List Sequencer via a GP-IB interface to the Crate Controller, using HBook ntuples for data storage. PAW++ was to be used both as a front-end for on-line monitoring and for off-line analysis. As a side outcome of this project, I made PAW++ on Linux available to the HEP community for the first time.

June 1996 - May 1997 Civil Service

1996-1998 Part-time work, on Unix system administration and technical support, for a local Internet Service Provider, with particular focus on security and advanced Web-based applications, leveraging CGI, SQL databases and JavaScript.

1998-1999 Independent consultant on LAN-Internet interconnection and Unix administration; coordinator and main developer in a large intranet project of the main theater in Prato.

## 3 Publications

- *Generation and detection of the polarization of multi-GeV photons by use of two diamond crystals* K.Kirsebom *et al.*; Phys. Lett. B 459 (1999)
- *Enhanced electromagnetic showers initiated by 20-GeV to 180-GeV gamma rays on aligned thick germanium crystals* A. Baurichter *et al.*; Nucl. Instrum. Meth. B : 152 (1999)

- *Pair production by 5-150 GeV photons in the strong crystalline fields of germanium, tungsten and iridium* Kirsebom, K ; *et al.*. 17th International Conference on Atomic Collisions in Solids - ICACS-17 Beijing, China ; 2 - 6 Jul 1997 . Publ. in: Proceedings Z L Wang, B R Shi and K M Wang Nucl. Instrum. Methods Phys. Res., B : 135 (1998) 1-4 (143-148 )
- *Radiation emission and its influence on the motion of multi-GeV electrons and positrons in strong crystalline fields.* Baurichter, A et al; Phys. Rev. Lett. 79 (1997)
- *Experimental investigation of photon multiplicity and radiation cooling for 150 GeV electrons/positrons traversing diamond and Si crystals* Kirsebom, K *et al.*. Nucl. Instr. Methods in Phys Res B 119 (1996) 79 - 95
- *Measurement of pair-production by high energy photons in an aligned tungsten crystal* Moore, R *et al.*. Workshop on Channeling and other Coherent Crystal Effects at Relativistic Energy Aarhus, Denmark ; 10 - 14 Jul 1995 . Publ. in: Proceedings Nucl. Instrum. Methods Phys. Res., B : 119 (1996) (149-155 )
- *Enhanced shower formation in aligned thick germanium crystals and discrimination against charged hadrons* Baurichter, A *et al.*. 4th International Conference on Advanced Technology and Particle Physics : ICATPP-4 Como, Italy ; 3 - 7 Oct 1994 . Publ. in: Proceedings E Borchini, S Majewski, J Huston, A Penzo and P G Rancoita Nucl. Phys. B, Proc. Suppl. : 44 (1995) (79-81 )
- *Enhancement of electromagnetic showers initiated by ultrarelativistic electrons in aligned thick germanium crystals* Baurichter, A *et al.*; Nucl. Instrum. Methods Phys. Res., B 119 (1996) 143 - 148
- *The Schonland micro-scanning ion beam analysis facility* Andeweg, A H *et al.*; Nucl. Instrum. Methods Phys. Res., B : 130 (1997) 1-4 37-44

## 4 Others

Associate author in the proposal P308 to the SPS Committee:

- *Proposal to study the use of a crystal as a "quarter-wave plate" to produce high energy circularly polarized photons* Apyan, A *et al.*