Curriculum vitae et studiorum

Date and place of birth: 5th October 1970, Cuneo - Italy

EDUCATION

- Laurea in Physics (1989-1994) -
  obtained at the Pavia University in June 1994 (110/110 cum laude).
- PhD in Particle Physics (1995-1998) -
  obtained at the Pavia University in May 1998.

During the years of education R. Petti was resident at the Collegio Ghislieri in Pavia (1989-1995) after passing the admittance examinations and at St. John's College in Cambridge, UK (summer 1993).

SCIENTIFIC ACTIVITY

- Work related to detector construction, event reconstruction and data analysis in the NOMAD experiment at CERN (1994-present).
- Phenomenological studies on neutrino cross-sections, parton distributions and nuclear effects on structure functions (2003-present).
- Work for the CNGS project at CERN (2001).
- Work to the detector R&D (1993) and to both hardware and software of the ATLAS Inner Detector (2003-2005) and Muon System (2007-present) at CERN.

A more detailed description of the research activity of R. Petti is given in the following.

POSITIONS

1998 - 1999 Post-doc Fellow at the Pavia University.

1999 - 2001 Research Fellow in Physics department at CERN.

2001 - 2005 Research Physicist in Physics department at CERN.

2005 - date Assistant Professor at the University of South Carolina (USC), USA.

PUBLICATIONS

R. Petti is co-author of 47 scientific papers. His research activity is also documented in several internal notes of the experiments to which he contributed. See the list of publications included.

R. Petti also served as referee for the international physics journal Physics Letters B.

CONFERENCES & WORKSHOPS

- Presentation of the NOMAD experiment at the LXXX Congress of the Italian Physical Society (SIF) in September 1994.
- La Thuile conference 1998 'Results and Perspectives in Particle Physics', where R. Petti presented the NOMAD results on neutrino oscillations [9].
- Particle Physics seminar at CERN in March 2000, where R. Petti presented the latest NOMAD oscillation results on behalf of the collaboration.
- Hanoi conference 2000 'IV Rencontres du Vietnam', where R. Petti presented the combined NOMAD/CHORUS results [16].
- CALOR2000 conference 'IX International conference on calorimetry in particle physics', Annecy October 9-14 2000, where R. Petti presented his parameterization of electromagnetic showers in lead-glass [18].
- Invited Particle Physics seminar at DESY in April 2002 on the status and prospects of neutrino physics at CERN and Gran Sasso.
- 11th Lomonosov Conference on Elementary Particle Physics, Moscow August 21-27 2003, where R. Petti presented the Weinberg angle analysis and the precision measurements he is leading in NOMAD [32].
- Talk on precision neutrino physics at a CERN EP Physics Workshop, October 29 2003.
- Hanoi conference 2004 'V Rencontres du Vietnam' August 2004, where R. Petti presented the NOMAD precision measurements including the Weinberg angle analysis [37].
- ICHEP conference 2004, Beijing August 2004, where R. Petti presented the NOMAD precision measurements and the Weinberg angle analysis [38].
- In 2004 R. Petti was appointed as a member of the Scientific Committee for the international conference IEEE in Rome (October 16-22). He was in charge of the review of the submitted contributions for the category "Radiation Damage Effects" and of the organization of the corresponding conference program.
- Invited talk at the T2K ND-280m workshop in Rome, December 2004, where R. Petti proposed possible new designs for the near detector at the long-baseline T2K project.
- Invited talk at Dubna physics workshop, January 2005, on precision neutrino physics.
- In 2005 R. Petti was appointed as a member of the Scientific Committee for the international conference IEEE in Puerto Rico (October 23-29). He was a referee for the submitted contributions for the category "Radiation Damage Effects"
- Invited talk about cross-section measurements in the NOMAD experiment at the 12th Lomonosov Conference on Elementary Particle Physics, Moscow August 25-31 2005 [43].
- Invited talk about (anti)neutrino cross-section modeling and cross-section measurements in NOMAD at the NuInt05 Conference on "Neutrino-Nucleus interactions in the few GeV region", Okayama September 26-29 2005 [44][45].

- Invited talk about nuclear modifications to structure functions at CTEQ workshop in Jefferson Laboratory, November 11-12 2005.
- Invited talk at Dubna physics workshop "Neutrino Physics at accelerators", January 2006, on neutrino cross-sections.
- Invited talks about nuclear modifications to structure functions and about low Q^2 structure functions at the workshop "Intersections of Nuclear Physics with Neutrinos and Electrons" in Jefferson Laboratory, May 4-5 2006.
- Invited talk about the modeling of low Q^2 structure functions for electron and neutrino scattering at the QUARKS-2006 conference in St. Petersburg, Russia, May 19-25, 2006.
- In 2006 R. Petti was appointed as a member of the Scientific Committee for the international conference IEEE in San Diego (October 29-November 4). He was a referee for the submitted contributions for the categories "Solid State Tracking Detectors" and "Computing and Software for Experiments".
- Contribution on impact of low-Q DIS data on global PDF fits at DIS 2007 in Munich (April 16-20 2007).
- Two invited talks about modeling neutrino-nucleon cross-sections in the transition region and about impact of low-Q DIS data on global PDF fits at the NuInt07 Conference on "Neutrino-Nucleus interactions in the few GeV region", Fermilab May 30 - June 3 2007.
- In 2007 R. Petti was appointed as a member of the Scientific Committee for the international conference IEEE in Honolulu (October 28-November 3). He was a referee for the submitted contributions for the categories "Solid State Tracking Detectors" and "Computing and Software for Experiments".

ACADEMIC ACTIVITY

Teaching

In the academic year 1997/1998 R. Petti was invited to give two series of lectures on neutrino oscillations and detector physics as a teaching assistant at the Pavia University. These lectures were part of the undergraduate teaching courses (IV year) of 'Particle Physics' and 'Nuclear Techniques' respectively.

In July 2005 R. Petti was invited to give lectures on Neutrino oscillations at the Baikal summer school on Physics of Elementary Particles and Astrophysics.

From 2005 R. Petti was teaching the following courses for undergraduate students at the University of South Carolina, USA:

- Fall 2005: Principles of Physics I (Phys206/211)
- Fall 2006: General Physics I (PhysE201)
- Spring 2007: General Physics I (Phys201)

Research supervision

As part of his research activity, R. Petti supervised the work of several PhD, undergraduate and summer students from different Universities:

- In 2000 R. Petti supervised the work of a PhD student (G. Vidal-Sitjes), who applied the new unified approach developed by R. Petti for the $\nu_\mu \to \nu_\tau$ search in the hadronic τ decays, to the $\tau \to 3h$ decay channels in NOMAD.

- In 2003 R. Petti supervised the work of a PhD student (H. Degaudenzi) on the analysis of charm dimuon production in the forward calorimeter (FCAL) in NOMAD.
- In 1998 R. Petti supervised the work of an undergraduate student (A. Gandolfo) on the study of the electron identification efficiency in NOMAD.
- In 2000 R. Petti supervised the work of an undergraduate student (M. Althaus) on the search for J/ψ production in neutral current interactions from FCAL in NOMAD.
- In 2001 R. Petti supervised the work of a CERN summer student (G. Bazzano) who studied the trigger efficiency of the NOMAD detector.
- In 2002 R. Petti supervised the work of a CERN summer student (P. Telford) on backgrounds from passing through charged tracks and reconstruction problems in NOMAD.
- In 2003 R. Petti supervised the work of a CERN summer student (J. Amoraal) on the test measurements of the end-cap wheels of the Transition Radiation Tracker (TRT) for the ATLAS experiment.

DESCRIPTION OF SCIENTIFIC ACTIVITY

NOMAD experiment (1994-present)

The activity of R. Petti in NOMAD [4] started in the early stage of the experiment and can be broadly divided into five main topics:

a) hardware activity related to the construction and operation of the lead-glass electromagnetic calorimeter (ECAL);

b) detailed study of the ECAL performance and of electromagnetic and hadronic showers in the lead-glass counters;

c) development of reconstruction algorithms;

d) analysis of data for the $\nu_\mu \rightarrow \nu_\tau$ oscillation search (main purpose of the NOMAD experiment) and for several other physics topics;

e) proposal and coordination of the precision measurements.

As described in the following, R. Petti had many responsibilities in the NOMAD experiment, from the detector operation to the data reconstruction and analysis. He is also a primary author and a scientific referee of many NOMAD physics papers. In 2003 he took the responsibility of the CERN research budget for the experiment.

Hardware related activity

In the early stage of the NOMAD experiment R. Petti was involved in the design and tests of the ECAL readout chain, including both photodetectors (tetrodes) and the electronic devices (preamplifiers, shapers and ADCs) [2]. In particular, he optimized the tetrode response in the presence of magnetic field and as a function of different configurations of the voltage dividers. He also tested the electronic readout and measured the corresponding noise performance. This was the subject of his Laurea thesis.

In addition, R. Petti participated in the extensive test-beam exposures of lead-glass counters, which were performed in order to optimize the ECAL design and to understand the detector response [3]. He also contributed to the final test-beam calibration of all ECAL modules, before the installation inside the NOMAD detector.

During his PhD, R. Petti fully participated to the NOMAD data taking (1995-1998), with the specific responsibility of the ECAL operation.

Study of electromagnetic and hadronic showers

As part of his Laurea thesis, R. Petti studied the energy and space resolution of the calorimeter and the lead-glass response to different particles [3].

In order to understand the ECAL behaviour, R. Petti performed then a detailed study of electromagnetic showers. This led to a general parameterization of e and γ initiated showers as a function of the kinematic parameters (E, θ, ϕ) of the incoming particles. This parameterization was then applied to the identification of electrons and γ and to the reconstruction of the e.m. clusters in the ECAL [6][18]. This was also part of his PhD thesis.

In the same context R. Petti participated to the development of a technique for estimating the energy released by hadronic showers in the calorimeter, based upon a probabilistic approach [5].

Reconstruction algorithms

The calorimetric studies described above were the starting point of a subsequent extensive work on the ECAL clusterization within the NOMAD reconstruction programs for the matching of the various sub-detectors. In particular, the techniques introduced by R. Petti to describe the shower development were crucial, due to the broad angle and momentum distributions of particles in the presence of magnetic field.

Oscillation searches

The activity of R. Petti was then finalized to the $\nu_\mu \to \nu_\tau$ search in the Deep Inelastic Scattering $\tau \to e\bar{\nu}_e\nu_\tau$ decay channel. This was the subject of his PhD thesis, based on the 1995 data sample that was submitted in February 1998. In order to optimize the signal/background separation he developed a probabilistic technique based on multi-dimensional likelihood ratios, thus greatly improving on previous cut-based analyses.

The analysis for the oscillation search was then extended to the latest data samples available (1996-1997). This analysis became the official NOMAD $\tau \to e\bar{\nu}_e\nu_\tau$ DIS search and was presented at the Vancouver ICHEP 1998 and at the following summer conferences [11][12].

The analysis of the full NOMAD data set (1995-1998) for the $\tau \to e\bar{\nu}_e\nu_\tau$ DIS search was subsequently completed by R. Petti and was presented at the 1999 summer conferences [15]. The results from this decay channel could exclude oscillations up to a probability $P_{\mu\tau} < 4.0 \times 10^{-4}$. The analysis scheme and the probabilistic approach developed for the electron channel were then applied under his guidance to the $\tau \to \rho\nu_\tau$ DIS decay mode, leading to a significant reduction of backgrounds [15]. Overall, combined limits of $P_{\mu\tau} < 2.2 \times 10^{-4}$ and $P_{e\tau} < 1.1 \times 10^{-2}$ could thus be achieved [15].

In the context of the hadronic τ decay modes, R. Petti developed then a new unified selection scheme [23]. In particular, he introduced an efficient kinematic tagging of unidentified muons from ν_μ charged current (CC) events. The approach also included a full kinematic suppression of CC backgrounds and a large rejection factor against neutral current (NC) interactions. This allowed the definition of significant regions characterized by the presence of a small background (less than 0.5 events) and, in turn, the improvement of the overall NOMAD sensitivity to oscillations from 4.3×10^{-4} to 2.5×10^{-4} [23]. The resulting analysis of the $\tau \to \nu_\tau h(n\pi^0)$ decays also became the most sensitive oscillation search in NOMAD. The final results that were obtained constrain the

oscillation probabilities to $P_{\mu\tau} < 1.7 \times 10^{-4}$ and $P_{e\tau} < 0.8 \times 10^{-2}$ and match the design sensitivity of the experiment ($P_{\mu\tau} = 1.9 \times 10^{-4}$). These are still the most stringent limits at large Δm^2.

R. Petti was responsible for the NOMAD $\nu_\mu \to \nu_\tau$ oscillation analysis in the described decay channels (accounting for about 95% of the overall sensitivity of the experiment) and for the evaluation of the NOMAD confidence regions.

In addition, R. Petti contributed to the estimate of the systematic uncertainties related to both the beam prediction and the analysis for the $\nu_\mu \to \nu_e$ oscillation search [30][31].

Precision measurements

Having completed the oscillation searches in September 2001 R. Petti proposed to switch the emphasis of the NOMAD data analysis to precision measurements of cross-sections and to the extraction of the weak mixing angle ($\sin^2\theta_W$) with a total expected uncertainty of $\sim 1\%$. The project, including many different physics subtopics, implied major software upgrades, a full raw data reprocessing, the recovery and reconstruction of new data samples and the development of new Monte Carlo simulations. It also implied establishing collaborations with theorists and phenomenologists as will be described later. He first demonstrated the feasibility of the project with a preliminary version of the final analysis and then carried on and coordinated the NOMAD activity, which he is currently leading.

The $\sin^2\theta_W$ analysis could benefit from the new techniques introduced by R. Petti for the oscillation search. In particular, his kinematic tagging of CC interactions proved to be crucial in the measurement of the NC/CC cross-section ratio. R. Petti also developed several new algorithms in order to significantly reduce systematic uncertainties, based on the use of real data. In addition, he doubled the overall available statistics in NOMAD, by recovering and reconstructing events originated in the front coil of the NOMAD magnet. This new data sample showed a good reconstruction quality of tracks and allowed the reduction of the uncertainties in some of the analyses already published and, at the same time, a study of nuclear effects from neutrino interactions on different materials (C, Al and Fe).

The original motivation of the measurement of the weak mixing angle was a direct probe of electroweak neutrino couplings in a way independent from LEP/SLD data and at a completely different Q^2 scale. The general interest of this analysis further increased after the release of the final measurement of $\sin^2\theta_W$ by the NuTeV collaboration in November 2001, showing a 3σ departure from the Standard Model predictions at the same average Q^2 accessible by NOMAD. The sensitivity of the NOMAD analysis proved to be within expectations and competitive with respect to NuTeV. Preliminary results on cross-sections and the estimate of the total uncertainty were presented by R. Petti at the ICHEP and summer conferences in August 2004 [37][38].

R. Petti is involved in several cross-section and structure function measurements [43][44]. Determinations of both the total $\sigma^{\rm tot}$ and the differential $d\sigma^2/dxdy$ CC cross-sections for ν_μ are performed as part of the NOMAD $\sin^2\theta_W$ analysis. The inclusive cross-section is used, together with the NOMAD measurement of quasi-elastic cross-section, to extract the fractions of QE, resonant and DIS interactions.

In addition, R. Petti reprocessed and partially recovered the events originated in the front calorimeter (FCAL), providing a total sample of 12M ν_μ CC events from an iron target. The sample is used for the measurement of the charm dimuon cross-section (from a total of 14k identified charm events), which he is leading. This analysis is important for the determination of the strange sea quark content of the nucleon.

Phenomenology (2003-present)

In order to reduce the uncertainties on the measurement of the Weinberg angle due to the limited knowledge of neutrino cross-sections, R. Petti started and coordinated a dedicated research project with theorists and phenomenologists, including few different topics: structure functions (S. Alekhin), nuclear effects (S. Kulagin) and electroweak corrections (A. Arbuzov and D. Bardin). The effort originated a new modeling of neutrino cross-sections, but at the same time it provided new insights on the above fields. As a consequence, it was decided to extend the common work to more general physics subjects, not directly connected to the NOMAD analysis. The direct contributions by R. Petti can be summarized as follows:

a) structure functions and parton distributions;

b) nuclear structure;

c) simulation of neutrino interactions.

Structure functions and parton distributions

One of the goals of the work performed by R. Petti in collaboration with S. Alekhin was to describe structure functions down to low Q^2. The behaviour of neutrino structure functions in the limit $Q^2 \to 0$ is quite different from electromagnetic interactions since while the vector current is conserved, the axial current is only partially conserved (PCAC). A phenomenological description of existing data from both (anti)neutrinos and charged leptons was obtained by smoothly interpolating between the NNLO calculations from the Operator Product Expansion (OPE) at a given Q_0^2 matching point and the $Q^2 \to 0$ limit predicted by current conservation arguments [44]. The approach is sensitive to High Twist (HT) contributions to structure functions, which were parameterized as simple power corrections.

A detailed study of HT terms in structure functions was performed from an analysis of low Q cross-section data [44]. Recent neutrino data (NOMAD, CHORUS, NuTeV, CCFR) allowed for the first time to achieve a precision comparable to charged lepton scattering in the determination of the corresponding HT terms, including the xF_3 contribution absent in electromagnetic interactions. The subject is related to the large Bjorken x behavior of the d/u quark distributions, which is still matter of debate. Another interesting related topic is the study of the quark/hadron duality, which is intimately connected to the nature of the transition from non-perturbative to perturbative QCD. The work included the analysis of recent data collected at Jefferson Laboratory.

The flavour selection of (anti)neutrino CC scattering was exploied in order to define the strange sea quark distribution. Combined QCD fits of both charm dimuon cross-sections (NOMAD, NuTeV and CCFR) and inclusive CC differential cross-sections allowed to achieve a good precision on the corresponding parameters. Results were particularly relevant for the extraction of $\sin^2\theta_W$.

The above studies resulted in global QCD fits to the combined set of charged lepton scattering, Drell-Yan and neutrino scattering data with reduced systematic uncertainties. This significantly improved the parameterization of parton distribution functions.

Nuclear structure

As a result of the collaboration with S. Kulagin, a model to describe nuclear modifications of inelastic structure functions was developed [41][45]. The work was based on a global analysis of charged lepton scattering off nuclei from D to Pb in order to obtain a consistent and quantitative description of nuclear effects in a wide kinematic region of x and Q^2. Many different mechanisms were taken into account including nuclear shadowing, nuclear pion excess, Fermi motion, nuclear

binding and off-shell corrections to bound nucleon structure functions. In particular, the off-shell structure function of bound nucleon was extracted phenomenologically from nuclear data and suggested an increase of about 10% in the nucleon core radius in nuclear environment [41].

The analysis performed on charged lepton nuclear data was then applied to the calculation of (anti)neutrino structure functions [45][49]. The main differences, which had to be taken into account, are related to the coherent processes (nuclear shadowing) due to the presence of the axial-vector current and are dominant at small Q^2 values [49]. Another interesting issue studied with neutrino data is the universality of the off-shell structure function for valence and sea quark distributions.

Other applications of the above studies of nuclear structure which were pursued include the extraction of neutron structure functions from D data, the estimate of nuclear corrections to Drell-Yan processes and the calculation of nuclear parton distribution functions (nPDF). In particular, the nuclear corrections to D appeared to be crucial to define the d/u ratio at large x values and were used in the QCD fits described in the previous section. In turn, nuclear parton distributions allow to characterize the nuclear targets in a process-independent way that can be used for a variety of high energy applications from nuclear DIS to LHC and RHIC experiments. The subject is also closely related to the study of High Twist contributions to nuclear structure functions.

Simulation of neutrino interactions

The results of the study of (anti)neutrino cross-sections on nuclei were then applied by R. Petti to produce a more reliable Monte Carlo simulation of neutrino interactions. In addition, a detailed tuning of parameters related to the jet fragmentation and to the nuclear secondary interactions inside target nuclei was performed in inelastic neutrino scattering. Overall, a good description of NOMAD data was achieved for many processes.

CNGS project (2001)

In 2001 R. Petti worked on the OPERA experiment (CNGS-1), within the CNGS (CERN to Gran Sasso) neutrino project. He contributed to the evaluation of the physics performance and of the corresponding sensitivity to oscillations. He was also involved in both laboratory and test-beam measurements of RPC prototypes for the electronic tracker that were performed at CERN [28].

In the summer 2001 he was appointed as the main editor of the official document (addendum to the proposal) describing the status and perspectives of the OPERA experiment [27]. The work performed in OPERA was later applied to the study of the physics case for an emulsion detector at a future neutrino factory [29]. He was also in charge of representing the OPERA collaboration within the CNGS working group for the beam preparation.

ATLAS experiment (1993 and 2003-2005)

The activity of R. Petti in ATLAS can be summarized in three main points:

a) early R&D work on radiation damage on silicon detectors for the central tracker;

b) hardware activity related to the production of TRT end-cap modules;

c) work to the offline reconstruction and analysis programs.

R&D on silicon detectors

During his stay at the St. John's College in Cambridge in 1993 R. Petti worked at the Cavendish Laboratory on radiation damage in the ATLAS silicon detectors. Both pad and strip detectors were irradiated at the ISIS neutron spallation source up to an integrated fluence of 1.5×10^{14} n cm^{-2} in order to study the increase of the leakage current and the decrease of the charge collection efficiency introduced by lattice defects [1]. The work included both hardware measurements and the subsequent analysis of data.

TRT hardware related activity

In March 2003 R. Petti joined the ATLAS experiment at CERN. He contributed to the tests of the end-cap wheels of the Transition Radiation Tracker (TRT) [33]. In particular, he developed an improved method to measure the wire tension of the drift tubes, by using a mechanical excitation through a loudspeaker driven by a complex signal. A spectral Fourier analysis was then used to extract the resonant frequency, which is related to the wire tension. In August 2003 he also participated in the test-beam exposure of TRT barrel modules at CERN [35].

Test-beam and offline reconstruction

In October 2003 R. Petti became the Inner Detector (including the TRT and the two silicon detectors SCT and Pixels) coordinator for the offline software of the 2004 combined test-beam. This test-beam took place from May 2004 till November 2004 and it was a major challenge for the ATLAS experiment since a complete slice of the final detector (inner detector, calorimeters and muon system) was exposed to e, π, μ, p and γ beams of energies ranging from 1 to 350 GeV. The work coordinated by R. Petti implied to adapt to the specific test-beam requirements the reconstruction and analysis tools foreseen for the full ATLAS experiment. In addition, it also required the integration of Pixels, SCT and TRT into a combined Inner Detector framework from the point of view of both the offline software itself and the sub-detector communities.

The work included applications like monitoring, database handling, track reconstruction, detector simulation, alignment, calibration and data analysis. The use of real data involving for the first time all sub-detectors imposed severe constraints at all levels of the data flow and allowed to add realism in both the ATLAS simulation and reconstruction. Preliminary results were presented by R. Petti and collaborators at the ATLAS Physics Workshop held in Roma in June 2005 and at following conferences [42].

The experience gained with the combined test-beam in 2004 was a crucial step for ATLAS in view of the full detector commissioning and operation.

List of publications

[1] D.J. Munday et al. (4 authors) -
'Uniformity of channel leakage current increase in silicon detectors after neutron irradiation',
Nuclear Physics B (Proc. Suppl.) 44 (1995) 520-523.

[2] D. Autiero et al. (41 authors) -
'The electromagnetic calorimeter of the NOMAD experiment',
Nuclear Instruments and Methods A 373 (1996) 358-373.

[3] D. Autiero et al. (39 authors) -
'Test beam performance of the electromagnetic calorimeter of the NOMAD experiment',
Nuclear Instruments and Methods A 387 (1997) 352-364.

[4] J. Altegoer et al. (159 authors) -
'The NOMAD experiment at the CERN SPS',
CERN-PPE/97-059, Nuclear Instruments and Methods A 404 (1998) 96-128.

[5] D. Autiero et al. (45 authors) -
'A study of the transverse fluctuations of hadronic showers in the NOMAD electromagnetic calorimeter',
CERN-PPE/97-150, Nuclear Instruments and Methods A 411 (1998) 285.

[6] D. Autiero et al. (43 authors) -
'Parameterization of e and γ initiated showers in the NOMAD lead-glass calorimeter',
CERN-EP/98-126, Nuclear Instruments and Methods A 425 (1999) 188-209.

[7] J. Altegoer et al. (157 authors) -
'Search for a new Gauge Boson in π^0 decays.',
CERN-EP/98-047, Physics Letters B 428 (1998) 197-205.

[8] J. Altegoer et al. (164 authors) -
'A search for $\nu_\mu \to \nu_\tau$ oscillations using the NOMAD detector.',
CERN-EP/98-57, Physics Letters B 431 (1998) 219-236.

[9] R. Petti (1 author) -
'Current results from the NOMAD experiment.',
Proceedings of the La Thuile conference - 1998.

[10] J. Altegoer et al. (160 authors) -
'Precision measurement of scaled momentum, charge multiplicity and thrust in $\nu_\mu N$ and $\bar{\nu}_\mu N$ interactions.',
CERN-EP/98-179, Physics Letters B 445 (1999) 439-448.

[11] P. Astier et al. (159 authors) -
'A more sensitive search for $\nu_\mu \to \nu_\tau$ oscillations in NOMAD.',
CERN-EP/99-32, Physics Letters B 453 (1999) 169.

[12] P. Astier et al. (147 authors) -
'Limit on $\nu_e \to \nu_\tau$ Oscillations from the NOMAD experiment.',
CERN-EP/99-151, Physics Letters B 471 (2000) 406.

[13] [13] P. Astier et al. (150 authors) -
'Neutrino production of opposite sign Dimuons in the NOMAD Experiment.',
CERN-EP/2000-072, Physics Letters B 486 (2000) 35-48.

[14] P. Astier et al. (150 authors) -
'Search for eV (pseudo)scalar penetrating particles in the SPS neutrino beam.',
CERN-EP/2000-042, Physics Letters B 479 (2000) 371-380.

[15] P. Astier et al. (145 authors) -
'Updated results from the ν_τ appearance search in NOMAD.',
CERN-EP/2000-049, Physics Letters B 483 (2000) 387-404.

[16] R. Petti (1 author) -
'Results of the ν_τ appearance search from the short baseline experiments at CERN.',
Proceedings of the Hanoi conference - 2000.

[17] P. Astier et al. (149 authors) -
'Measurement of the Λ polarization in ν_μ charged current interactions in the NOMAD experiment.',
CERN-EP/2000-111, Nuclear Physics B 588 (2000) 3-36.

[18] R. Petti (1 author) -
'Parameterization of e and γ initiated showers in lead-glass calorimeters',
Proceedings of the CALOR2000 conference - 2000.

[19] P. Astier et al. (147 authors) -
'Search for heavy neutrinos mixing with τ neutrinos',
CERN-EP-2001-005, Physics Letters B 506 (2001) 27-38.

[20] P. Astier et al. (146 authors) -
'Inclusive production of $\rho^0(770)$, $f_0(980)$ and $f_2(1270)$ mesons in ν_μ charged current interactions.',
CERN-EP-2001-024, Physics Letters B 601 (2001)3-23.

[21] P. Astier et al. (148 authors) -
'Measurement of the $\bar{\Lambda}$ polarization in ν_μ charged current interactions in the NOMAD experiment.',
CERN-EP-2001-028, Nuclear Physics B605 (2001) 3-14.

[22] P. Astier et al. (148 authors) -
'A study of backward going p and π^- in ν_μ Charged Current interactions with the NOMAD Detector.',
CERN-EP/2001-038, hep-ex/0105048, Nucl. Phys. B609 (2001) 255-279.

[23] P. Astier et al. (149 authors) -
'Final NOMAD results on $\nu_\mu \to \nu_\tau$ and $\nu_e \to \nu_\tau$ oscillations including a new search for ν_τ appearance using hadronic τ decays.',
CERN-EP/2001-043, hep-ex/0106102, Nucl. Phys. B611 (2001) 3-39.

[24] P. Astier et al. (151 authors) -
'A study of strange particle production in ν_μ charged current interactions in the NOMAD experiment.',
CERN-EP/2001-081, hep-ex/0111057, Nucl. Phys. B621/1-2 (2001) 3-34.

[25] P. Astier et al. (151 authors) -
'Study of D^{*+} production in ν_μ charged current interactions in the NOMAD experiment.',
CERN-EP/2001-083, Phys. Lett. B 526 (2002) 278-286.

[26] P. Astier et al. (146 authors) -
'New results on a search for a 33.9 MeV/c^2 neutral particle from π^+ decay in the NOMAD experiment.',
Phys. Lett. B 527 (2002) 23-28.

[27] M. Guler et al. (165 authors) -
'Status report on the OPERA experiment.',
CERN-SPSC-2001-025, CERN-SPSC-M-668, LNGS-EXP-30-2001-ADD-1, Aug 2001.

[28] S. Dusini et al. (22 authors) -
'Design and prototype tests of the RPC system for the OPERA spectrometers.',
Nuclear Instruments and Methods A 508 (2003) 175-180.

[29] D. Autiero et al. (9 authors) -
'The synergy of the golden and silver channels at the neutrino factory.',
hep-ph/0305185, European Physical Journal C 33 (2004) 243.

[30] P. Astier et al. (152 authors) -
'Search for $\nu_\mu \to \nu_e$ oscillations in the NOMAD experiment.',
CERN-EP/2003-038, hep-ex/0306037, Phys. Lett. B 570 (2003) 19-31.

[31] P. Astier et al. (144 authors) -
'Predictions of neutrino fluxes in the NOMAD experiment.',
CERN-EP/2003-032, hep-ex/0306022, Nucl. Instr. and Meth. A 515 (2003) 800-828.

[32] R. Petti (1 author) -
'Precision measurements from the NOMAD experiment.',
Proceedings of 11th Lomonosov conference, August 2003, published by World Scientific.

[33] T. Akesson et al. (84 authors) -
'Status of design and construction of the Transition Radiation Tracker (TRT) for the ATLAS experiment at the LHC.',
Nucl. Instr. and Meth. A 522 (2004) 131.

[34] T. Akesson et al. (84 authors) -
'Operation of the ATLAS Transition Radiation Tracker under very high irradiation at the CERN LHC.',
Nucl. Instr. and Meth. A 522 (2004) 25.

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