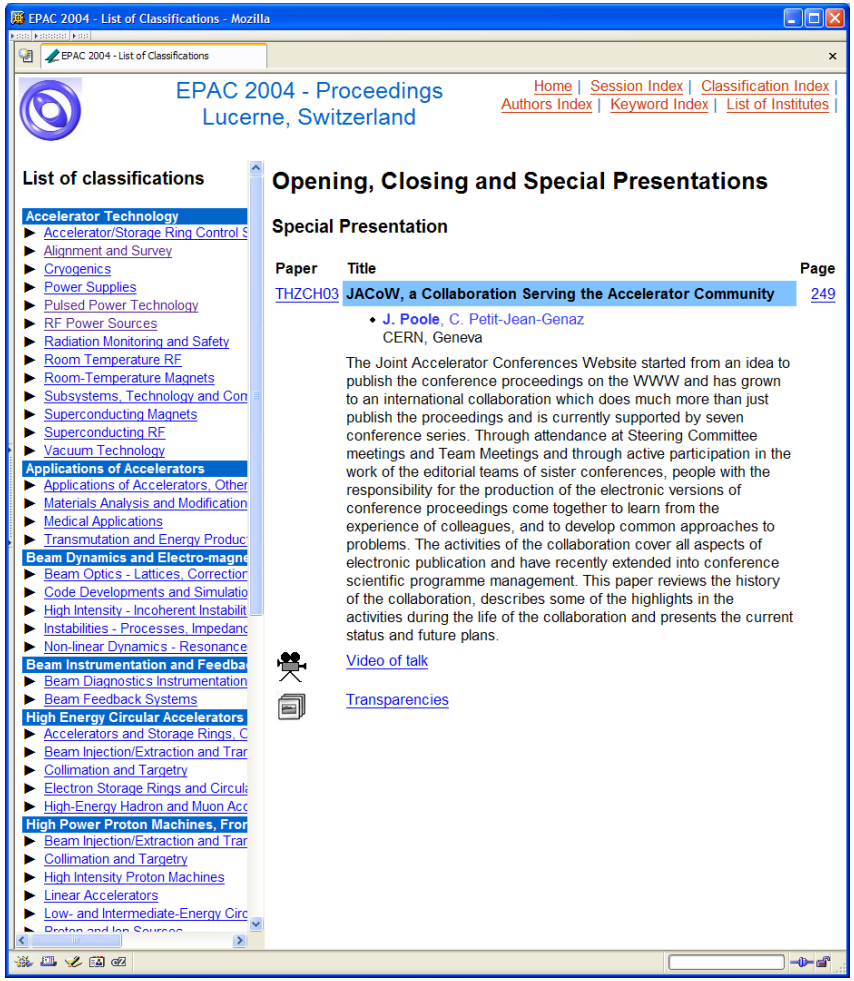
News from the "Wrapper"

Volker RW Schaa

Gesellschaft für Schwerionenforschung mbH
Darmstadt, Germany

JACoW Team Meeting 2004
Knoxville, Tennessee
November 7, 2004



What is still the same?

A year ago in Trieste I gave a talk about a “Wrapper” script.

As a “Newcomer” having dealt with a real small conference.

Now EPAC2004 and LINAC2004 have passed by.

What have I learnt?

What is still the same in this script?

- Web Site is generated in Unicode (UTF8)
- Input is XML
- Wrapping everything in TEX scripts
- LATEX export for proceedings volume
- Speed

What has changed?

What has changed since my talk in Trieste?

- Input
  - Completely new structure of XML
  - Extended set of accented characters
  - Set of recognized math characters
  - Set of recognized “writings”
- Web Site
  - Extended configuration possibilities
  - Cascading style sheet
  - Set of recognized characters/“writings”
  - Classification Index
- Paper processing, booklet, and proceedings production
  - Extended configuration possibilities
  - ConTEXt export for *Abstract booklet*
  - Set of recognized characters/“writings”
  - CD production
- Speed

New Structure of XML

The XML structure for a paper

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    <code>THZCH03</code>
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New Structure of XML

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    + <contributor type="Co-Author"></contributor>  sorry Christine !
    + <contributor type="Speaker"></contributor>
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  </paper>
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Extended set of accented characters

À à Á á Â â Ä ä Å å Æ æ

Ç ç È è É é Ê ê Ë ë

ï Ï Ñ ñ

Ò ò Ó ó Ô ô Ö ö Œ œ Ø ø

ß Ù ù Ú ú Û û Ü ü

Ÿ ÿ ỳ

Č č Š š

and several more. . .

Set of recognized math characters (LaTeX mode)

\alpha	α	\beta	β	\gamma	γ
\delta	δ	\epsilon	ϵ	\varepsilon	ε
\zeta	ζ	\eta	η	\theta	θ
\vartheta	ϑ	\iota	ι	\kappa	κ
\lambda	λ	lambda	λ	μ	μ
\micro	μ	\mu	μ	\nu	ν
\xi	ξ	<pi>	π	\pi	π
\varpi	ϖ	\rho	ρ	\varrho	ϱ
\sigma	σ	sigma	σ	\varsigma	ς
\tau	τ	\upsilon	υ	\phi	ϕ
\varphi	φ	\chi	χ	\psi	ψ
\omega	ω	\Gamma	Γ	\Delta	Δ
\Theta	Θ	\Lambda	Λ	\Xi	Ξ
\Pi	Π	\Sigma	Σ	\Upsilon	Υ
\Phi	Φ	\Psi	Ψ	\Omega	Ω

Set of recognized “writings”

e+e-	e^+e^-	e-␣	e^-␣	e+␣	e^+␣
H+	H^+	H2+	H^{2+}	H-␣	H^-␣
D+	D^+				
+-	$\pm$	+/-	$\pm$		
ab^{abc}	ab^{abc}	ab^{abc}	ab^{abc}	\sqrt{123}	$\sqrt{123}$
ab_{abc}	ab_{abc}	ab$_{abc}$	ab_{abc}	ab^123?	ab^{123}?
10e123	10^{123}	10^123	10^{123}	10**123␣	10^{123}␣
10e-123	10^{-123}	10^-123	10^{-123}	_abcdef_	**abcdef**
10-123␣	10^{-123}␣	12.3e12␣		12.3 × 10^12␣	
A1+	A^{1+},	AB12+	AB^{12+}	microsec	µs

Math characters available (LaTeX mode)

deg	Σ	Π	$\int$	$\oint$	$\bigcap$	$\bigcup$	$\bigvee$	$\bigwedge$	$\bigotimes$	$\bigoplus$	$\hbar$
$\imath$	$\jmath$	ℓ	$\wp$	$\Re$	$\Im$	$\prime$	$\emptyset$	$\angle$	∞	∂	∇
$\forall$	$\exists$	$\neg$	$\surd$	$\top$	$\bot$	$\backslash$	$\clubsuit$	$\diamondsuit$	$\heartsuit$	$\spadesuit$	$\dagger$
$\ddagger$	$\S$	$\P$	$\copyright$	$\pounds$	$\diamond$	$\Box$	$\cdot$	$\ldots$	$\cdots$	$\vdots$	$\ddots$
$\lfloor$	$\lceil$	$\langle$	$\rfloor$	$\rceil$	$\rangle$	$\uparrow$	$\downarrow$	$\Uparrow$	$\Downarrow$	$\leq$	$\geq$
$\ll$	$\gg$	$\subset$	$\supset$	$\subseteq$	$\supseteq$	$\in$	$\ni$	$\equiv$	$\sim$	$\perp$	$\simeq$
$\parallel$	$\approx$	$\cong$	$\neq$	$\propto$	$\times$	$\times$	$\div$	$*$	$\star$	0	$\circ$
$\bullet$	$\cdot$	$\cap$	$\cup$	$\vee$	$\wedge$	$\diamond$	$\oplus$	$\otimes$	$\oslash$	$\dagger$	$\ddagger$
$\longrightarrow$	$\longleftarrow$	$\longleftrightarrow$	$\longmapsto$	$\Longrightarrow$	$\Longleftarrow$	$\Longleftrightarrow$	$\leftarrow$	$\Leftarrow$	$\rightarrow$	$\Rightarrow$	$\leftrightarrow$
$\Leftrightarrow$	$\mapsto$	$\uparrow$	$\Uparrow$	$\downarrow$	$\Downarrow$	$\hbar$	$\angle$	$\lesssim$			

Math characters on a Web page in Unicode (UTF8)

Paper	Title	Page
PM01	**Use of Optical Transition Radiation Interferometry for Energy Spread And Divergence Measurements**	89

- **R.B. Fiorito**, A.G. Shkvarunets
  Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD, USA

OTR interferometry (OTRI) has been shown to be an excellent diagnostic for measuring the rms divergence and emittance of relativistic electron beams when the energy spread $\Delta\gamma/\gamma$ is less than the normalized rms divergence $\sigma = \gamma\Theta_{rms}$. This is the case for most beams previously diagnosed with OTRI. To extend this diagnostic capability to beams with larger energy spreads, we have calculated the effects of all the parameters effecting the visibility of OTR interferences, V; i.e. energy spread, angular divergence, the ratio of foil separation to wavelength ratio, d/λ and filter bandpass. We have shown that:

1. for a given $\Delta\gamma/\gamma$, the sensitivity of V to σ is proportional to the observation angle Θ_0, the fringe order **n** and the ratio d/λ;
2. the sensitivity of V to $\Delta\gamma/\gamma$ is independent of Θ_0 and **n** but is proportional to d/λ.

Extended configuration possibilities

- Cascading style sheet definitions
- Switches for footnote, funding note inclusion
- Switch for proceedings volume production
- Configuration file entries for
  - Base URL and base directory
  - Talk/transparencies directory
  - HTML, image, “raw” paper and final paper directories
  - All conference site specific URLs, logos, etc.
- Page number configurable from XML input or script counting
- some more. . .

Classification Index

LINAC 2004 - Proceedings
Lübeck, Germany

Home | Session Index | Classification Index | Authors Index | Keyword Inde
List of Institute

List of classifications

Technology, Components, Subsystems

RF Structures

Paper	Title	Page

TU201 **The KEK C-Band RF System for a Linear Collider**

- **H. Matsumoto**
  KEK, Ibaraki

The C-band (5712 MHz) main linac has been developed just motivated by the urgent and essential physics program at the e^+e^- linear collider. In total ~8000 accelerating structures and ~4000 klystrons with modulators are needed for 500 GeV C.M. energy. Therefore these units have to meet strict requirements for: high reliability, simplicity, easy operation, reasonable power efficiency and low cost. This list provides a guiding principle and the boundary conditions for our design work. We have already developed the conventional and PPM type 50 MW class C-band klystrons, modulators, and HOM-free accelerator structures. The first high power an rf compressor cavity made of a low thermal expansion material was designed to provide stable operation even with a very high Q of 200 k, it was successfully operated an output rf power of 135 MW at KEK. The C-band linac rf-system will be used for the SASE-FEL project at SPring-8, but it will also serve to verify the design and components, which can eventually be deployed for the main linac rf system in a future linear collider.

TU203 **High Pressure, High Gradient Cavities for Muon Cooling**

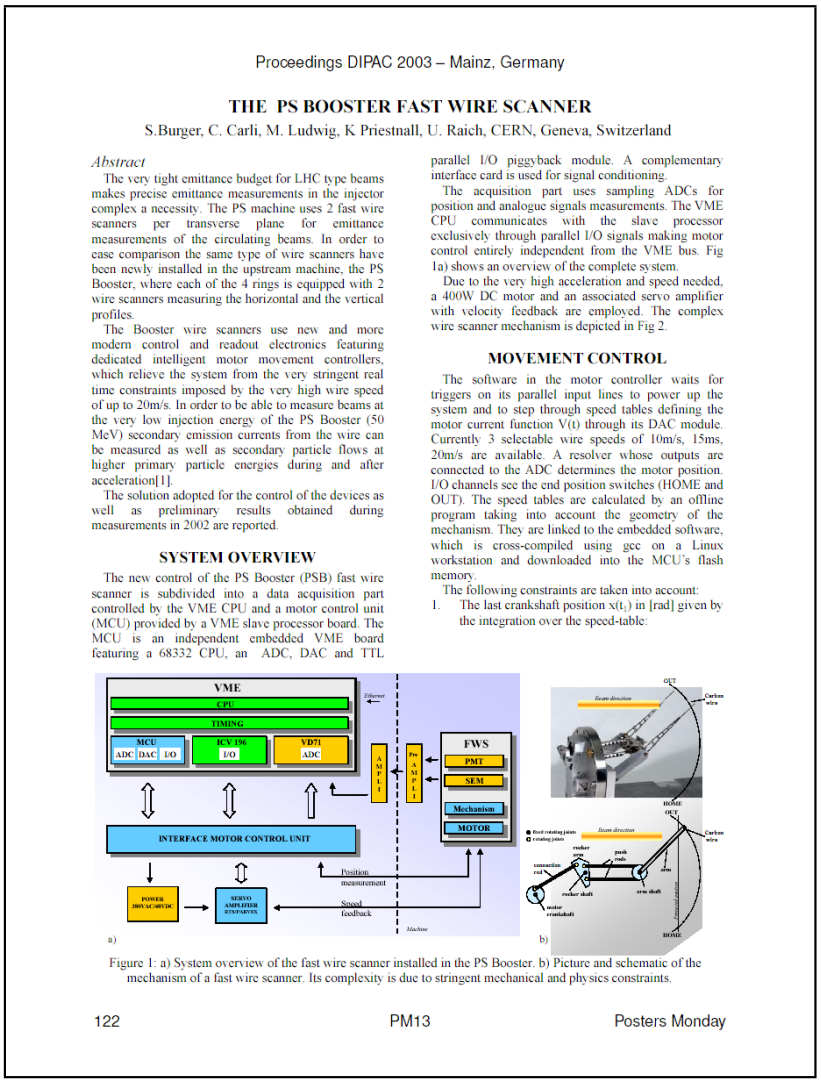
- **R. P. Johnson**, M. Popovic
  FNAL, Batavia, Illinois
- C. M. Ankenbrandt, A. Moretti
  Fermilab, Batavia, Illinois
- D. M. Kaplan, K. Yonehara
  IIT, Chicago, Illinois

High intensity, low emittance muon beams are needed for new applications such as muon colliders and neutrino factories based on muon storage rings. Ionization cooling, where muon energy is lost in a low-Z absorber and only the longitudinal component is regenerated using RF cavities, is presently the only known cooling technique that is fast enough to be effective in the short muon lifetime. RF cavities filled with high-pressure hydrogen gas bring two advantages to the ionization technique:

1. the energy absorption and energy regeneration happen simultaneously rather than sequentially, and
2. higher RF gradients and better cavity breakdown behavior are possible than in vacuum due to the Paschen effect.

These advantages and some disadvantages and risks will be discussed along with a description of the present and desired RF R&D efforts needed to make accelerators and colliders based on muon beams less futuristic.

Extended configuration possibilities (Header/Footer DIPAC2003)



Proceedings DIPAC 2003 – Mainz, Germany

THE PS BOOSTER FAST WIRE SCANNER

S.Burger, C. Carli, M. Ludwig, K Priestnall, U. Raich, CERN, Geneva, Switzerland

Abstract

The very tight emittance budget for LHC type beams makes precise emittance measurements in the injector complex a necessity. The PS machine uses 2 fast wire scanners per transverse plane for emittance measurements of the circulating beams. In order to ease comparison the same type of wire scanners have been newly installed in the upstream machine, the PS Booster, where each of the 4 rings is equipped with 2 wire scanners measuring the horizontal and the vertical profiles.

The Booster wire scanners use new and more modern control and readout electronics featuring dedicated intelligent motor movement controllers, which relieve the system from the very stringent real time constraints imposed by the very high wire speed of up to 20m/s. In order to be able to measure beams at the very low injection energy of the PS Booster (50 MeV) secondary emission currents from the wire can be measured as well as secondary particle flows at higher primary particle energies during and after acceleration[1].

The solution adopted for the control of the devices as well as preliminary results obtained during measurements in 2002 are reported.

SYSTEM OVERVIEW

The new control of the PS Booster (PSB) fast wire scanner is subdivided into a data acquisition part controlled by the VME CPU and a motor control unit (MCU) provided by a VME slave processor board. The MCU is an independent embedded VME board featuring a 68332 CPU, an ADC, DAC and TTL parallel I/O piggyback module. A complementary interface card is used for signal conditioning.

The acquisition part uses sampling ADCs for position and analogue signals measurements. The VME CPU communicates with the slave processor exclusively through parallel I/O signals making motor control entirely independent from the VME bus. Fig 1a) shows an overview of the complete system.

Due to the very high acceleration and speed needed, a 400W DC motor and an associated servo amplifier with velocity feedback are employed. The complex wire scanner mechanism is depicted in Fig 2.

MOVEMENT CONTROL

The software in the motor controller waits for triggers on its parallel input lines to power up the system and to step through speed tables defining the motor current function V(t) through its DAC module. Currently 3 selectable wire speeds of 10m/s, 15ms, 20m/s are available. A resolver whose outputs are connected to the ADC determines the motor position. I/O channels see the end position switches (HOME and OUT). The speed tables are calculated by an offline program taking into account the geometry of the mechanism. They are linked to the embedded software, which is cross-compiled using gcc on a Linux workstation and downloaded into the MCU's flash memory.

The following constraints are taken into account:

1. The last crankshaft position $x(t_1)$ in [rad] given by the integration over the speed-table:

Figure 1: a) System overview of the fast wire scanner installed in the PS Booster. b) Picture and schematic of the mechanism of a fast wire scanner. Its complexity is due to stringent mechanical and physics constraints.

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Extended configuration possibilities (Header/Footer EPAC04)

Proceedings of EPAC 2004, Lucerne, Switzerland

JACoW - A COLLABORATION SERVING THE ACCELERATOR COMMUNITY

J. Poole, C. Petit-Jean-Genaz, CERN, Geneva, Switzerland

Abstract

The Joint Accelerator Conferences Website started from an idea to publish particle accelerator conference proceedings on the WWW and has grown into an international collaboration supported by ten conference series. Through attendance at Steering Committee meetings and Team Meetings and through active participation in the work of the editorial teams of sister conferences, people with the responsibility for the production of the electronic versions of conference proceedings come together to learn from the experience of colleagues, and to develop common approaches to problems. The activities of the collaboration cover all aspects of electronic publication and have recently extended into conference scientific programme management. This paper reviews the history of the collaboration, describes some of the highlights in the activities during the life of the collaboration and presents the current status and future plans.

HISTORICAL DEVELOPMENT

In 1995 it was decided to publish EPAC's proceedings electronically and in preparation for this, the 1995 LEP Performance Workshop was used as pilot scheme. At the same time preparations were being made for the electronic publication of PAC'95 and EPAC was invited to collaborate in the processing in Dallas. It turned out that there was a very high failure rate in processing largely due to the lack of clear guidelines, author information and templates. This prompted us to develop a programme of author and editor education. This led to the formation of a team which went on to become the basis of the JACoW team. PAC and EPAC editors were invited to EPAC'96 and for the first time papers were processed at the conference to facilitate face-to-face feedback to authors at the conference.

Following the publication of EPAC'96 proceedings on the web, a Joint EPAC/PAC Website was proposed by PAC'99 Programme Chairman, Ilan Ben Zvi. The organisers of both series agreed to the principle and to give continued support to such a collaboration. APAC was subsequently invited to join and JACoW was formally set up after a meeting at PAC'97.

The JACoW team has always been involved in all stages of paper production from pre-conference instructions to paper submission, paper processing and finally to the publication of the proceedings. Attendance at regular meetings and sharing of skills was introduced as a formal requirement in the JACoW Terms of Reference in the year 2002, although it had been a feature of the modus operandi from the beginning.

The collaboration has grown steadily since that time and continues to attract new conferences each year. Although JACoW is based on an international collaboration in electronic publication of accelerator conference proceedings, it now does much more than just publish the proceedings as can be seen below.

WEBSITE FUNCTIONALITY

It was decided that the website should feature a search engine with a custom interface which would allow users to make Boolean searches across one or many of the conferences, by specifying titles, authors, keywords and/or full text searches. It was also decided that the papers must appear on the user's screen rapidly and with good visual quality. In order for the website to meet these requirements it is necessary for the PDF files of the papers to conform to certain standards. One of the first features introduced was a special paper size chosen so that the paper would print correctly centred on both US letter and A4 paper. This kind of constraint lead the collaboration to set up templates for authors to use in the preparation of their papers.

The website provides a portal to information designed to assist authors in the preparation of papers for electronic publication, information about the collaboration and its meetings, the templates and of course the interface to the proceedings and the search engine.

Mirror sites were set up in USA and Asia with the aim of providing full functionality at high speed around the world. It proved to be difficult to provide the full functionality from the USA site but it was found that the performance from the European site was imperceptibly different, so the US site was abandoned but the Asian site was maintained. It was felt that users in USA were able to benefit from the huge bandwidths available to CERN whereas some of the Asian institutes were not so fortunate.

PAPER PROCESSING

Production of files for the website is never straightforward - there are always difficulties to make PDF files from some of the contributions and there are also a large number of papers submitted which do not conform to the JACoW specifications. The collaboration therefore has to train editors in the processing of papers and in the preparation of the PDF files for submission to the website. A cornerstone of author education is the famous dotting board, introduced at EPAC'96, which has been a feature of JACoW conferences ever since. A red dot against a paper informs the author that he should contact the proceedings office and we are able to

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Extended configuration possibilities (Header/Footer LINAC04)

THE PHYSICS PERSPECTIVES AT THE FUTURE ACCELERATOR FACILITY FAIR

J. Stroth, GSI, Darmstadt, Germany*

Abstract

The future international accelerator Facility for Antiproton and Ion Research FAIR at Darmstadt, Germany will serve as research facility for a large community of scientists in Europe and around the world. It will expand on experiences made at GSI in combining synchrotrons with storage rings, and will open access to a broad spectrum of experimental approaches. The physics of strongly interacting systems is the main research field, but also aspects of atomic and plasma physics as well as material science will be addressed. The key features of the facility are high intensities, multi-user parallel operation and brilliant beams of secondary reaction products, i.e. exotic instable nuclei and anti-protons. The opportunities have attracted by now three large communities interested in nuclear structure studies using rare isotopes, hadron spectroscopy exploiting collisions of anti-protons with various targets and physics of ultra-dense nuclear matter created in central collisions of very heavy ions. Moreover, many smaller groups of scientists have proposed exiting experiments to investigate e.g. anti-matter, QED in strong fields and strongly correlated plasmas.

INTRODUCTION

At the end of the past decade the Gesellschaft für Schwerionenforschung (GSI), together with Universities and various international user groups, triggered an initiative aimed at providing the European and international science community with a new, world-wide unique accelerator complex. The Conceptual Design Report [1] was presented to the German Ministry for Education and Research in 2002 and was finally approved in 2003 after evaluation by an International Expert Committee put in charge by the German Science Council. The projected facility has been optimized to guarantee excellent conditions for future challenging experiments on open questions concerning - in broadest terms - many-body system governed by the strong interaction and also in related fields. The concept of the future facility founds on the positive experiences made at GSI with combining a synchrotron and a storage ring. Its layout is depicted in Fig. 1.

About 100 years after Rutherford's discovery of the atomic nucleus compelling information about the structure and reaction of nuclei has been collected. As of this, nuclear physics nowadays is concerned with a much broader scope of questions ranging from the dynamics of the elementary quarks and gluons to the evolution of super-nova explosions and the formation of neutron stars. Objects, which differ in size by almost 20 orders of magnitude,

* j.stroth@gsi.de

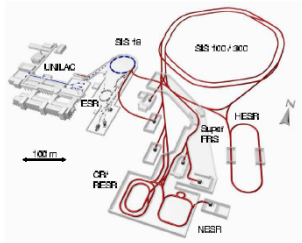

Figure 1: Projected layout of FAIR. The future facility (plotted in red) will be arranged around the old GSI accelerator complex (plotted in blue) comprising the Universal Linear Accelerator UNILAC, a 18 Tm synchrotron (SIS 18) and the Experimental Storage Ring (ESR). The new complex is composed of a rapid cycling 100 Tm synchrotron SIS 100 and a stretcher synchrotron SIS 300 for maximum beam energy and slow extraction. The new super fragment separator (Super FRS) will catch secondary reaction products after dissociation of stable beams of highest intensities. A set of three storage rings is used for collection and pre-cooling (CR), deceleration (RESR) and in-ring experiments with secondary beams in the New Experimental Storage Ring (NESR). The large high energy storage ring (HESR) will provide circulating brilliant beams of antiprotons.

but all essentially governed by the strong interaction. Recently, various national and international advisory committees have outlined the most important avenues for nuclear research in the next decade [2, 3, 4]. Among the top priority research direction are:

- Properties of hot and dense nuclear matter and new phases of matter.
- Non-perturbative effects of QCD and the formation of hadrons.
- Structure and reactions of short-lived, exotic isotopes.
- Symmetries and physics beyond the standard model.

Besides their importance in their own, these fields are intimately linked to the microscopic understanding of cosmological and astrophysical processes.

Although the larger part of the user community will work in nuclear and hadron physics, a still growing fraction of

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Subclassification

ConTEXt export for *Abstract booklet*

was observed from the phase shift measurement performed after the processing. Processed accelerator was installed in the beam line of KEKB linac and being re-processed. The beam acceleration of 40 MV/m was successfully achieved in October 2003. Present status of C-band accelerator development is reported.

MOP32

Acceleration Results from a Four-Cell S-Band PWT Linac Structure

K. K. Pant, B. Biswas, U. Kale, V. Kodiarasan, S. Krishnagopal, A. Kumar, V. Kumar, S.L. Kumawat, P. Nerpagar (CAT, Indore) R. Parkar (CAT, Indore M.P.)

A 21 cm long, four-cell S-band Plane Wave Transformer (PWT) linac structure operating in the 'π-mode' has been designed, developed and tested at the Beam Physics & FEL Laboratory. The energy spectrum obtained from recent experiments with a 40 keV, 2 μs un-bunched electron beam injected directly into the linac from a thermionic gun shows acceleration of the electrons by the structure to various energies. Maximum acceleration upto 3.5 MeV has been measured using a bending magnet energy spectrometer with about 4 MW of microwave power going into the structure. In this paper we discuss the development of the structure, results obtained from the acceleration experiments, and our plans for the future.

MOP33

A Flat Beam Electron Source for the TESLA Linear Collider

P. Piot (FNAL, Batavia, Illinois)

We present a concept for an electron injector, for the TESLA linear collider, capable of producing an electron beam with parameters similar to those produced downstream of the electron damping ring in the present design (with a charge of 3.2 nC). The injector design is based on the round-to-flat beam transformation of an incoming angular-momentum-dominated electron beam. In contrast to the TESLA linear collider nominal design, our setup precludes the use of a damping ring for the electron injector. We compare the performances of our flat beam photo-injector with those of the nominal TESLA design.

Funding: Work supported by the US department of Energy Under Contract No. DE-AC02-76CH03000

MOP34

Injector Linac Upgrade for the BEPCII Project

S.H. Wang (IHEP Beijing, Beijing)

BEPCII- an upgrade project of Beijing Electron Positron Collider (BEPC) is a factory type of e^+e^- collider. It requests its injector linac to have the higher beam energy (1.89 GeV) for on-energy injection and the higher beam current (40 mA e^+ beam) for higher injection rate (≥50 mA/min). The low beam emittance (1.6 π·mm·mrad for e^+ beam, and 0.2 π·mm·mrad for 300 mA e^- beam) and low beam energy spread (±0.5%) are also requested to meet the storage ring acceptance. Hence the original BEPC injector linac must be upgraded to have a new electron gun with its complete tuning system, a new positron source with a flux concentrator, a new RF power system with its phasing loops and a new beam tuning system with orbit correction and optics tuning devices. These new components have been designed, fabricated, tested and now being installed in their final positions, which are described in this paper. The beam commissioning is expected to start from the October of 2004.

Funding: Institute of High Energy Physics, Chinese Academy of Sciences,Beijing 100039, China.

MOP35

The Research of a SW Accelerating Structure with Small Beam Spot

X. Yang (CAEP/IAP, Mianyang, Sichuan)

A new kind of on-axis coupled biperiodic standing-wave (SW) accelerating structure has been built for a 9 MeV accelerator. The research progress was introduced in this paper, it includes the choice of the accelerating structure, the analysis of electron beam dynamics, the tuning of the cavity, the measurement of the accelerating tube and the powered test. The small beam spot is the most interesting feature of this accelerating structure, the diameter of the beam spot is 1.4 mm. This accelerator has been used for the x photons generation and the x-ray dose rate is about 3400 rad/min/m.

MOP36

Preliminary Study on HOM-Based Beam Alignment in the TESLA Test Facility

N. Baboi, H. Schlarb (DESY, Hamburg) O. Napoly (CEA/DSM/DAPNIA, Gif-sur-Yvette) R. Paparella (CEA/DAPNIA-SACM, Gif-sur-Yvette Cedex)

The interaction of the beam with the higher order modes (HOM) in the TESLA cavities has been studied in the past at the TESLA Test Facility (TTF) in order to determine whether the modes with the highest loss factor are sufficiently damped. The same modes can be used actively for beam alignment. At TTF the beam alignment based on the HOM signals is planned to be studied in the first cryo-module, containing 8 accelerating cavities. One of several modes with higher loss factor will be used. Its polarization has to be determined. The options to use single bunches or bunch trains will be analyzed. The results will be discussed in this paper.

MOP37

Optimization of Positron Capture in NLC

Y.K. Batygin (SLAC, Stanford)

In the Next Linear Collider design, the positron capture system includes a positron production target, a flux concentrator, and a linac to accelerate positrons up to 1.9 GeV, the injection energy of the positron pre-damping ring. Two schemes for positron production have been studied:

a. a conventional approach with a 6.2 GeV electron beam interacting with a high-Z target and
b. polarized positron production using polarized photons generated in a helical undulator by a 150 GeV electron beam which then interact with a positron production target.

The capture system has been optimized to insure high positron yield into the 6-dimensional acceptance of the pre-damping ring. Various parameters affecting the positron capture have been analyzed, including: positron deceleration after the flux concentrator, transverse and longitudinal electron beam sizes for positron generation, energy compression after acceleration, etc. As a result of these optimization studies, the positron yield in the conventional scheme has been increased from 1.0 to at least 1.5 and for the polarized positron scheme from 0.25 to 0.30 while maintaining 60% positron polarization.

Funding: Work supported by the US Department of Energy, contract number DE-AC03-76SF00515.

ConTEXt export for *Abstract booklet* (recognized "writings"/characters)

was observed from the phase shift measurement performed after the processing. Processed accelerator was installed in the beam line of KEKB linac and being re-processed. The beam acceleration of 40 MV/m was successfully achieved in October 2003. Present status of C-band accelerator development is reported.

MOP32

Acceleration Results from a Four-Cell S-Band PWT Linac Structure

K. K. Pant, B. Biswas, U. Kale, V. Kodiarasan, S. Krishnagopal, A. Kumar, V. Kumar, S.L. Kumawat, P. Nerpagar (CAT, Indore) R. Parkar (CAT, Indore M.P.)

A 21 cm long, four-cell S-band Plane Wave Transformer (PWT) linac structure operating in the 'π-mode' has been designed, developed and tested at the Beam Physics & FEL Laboratory. The energy spectrum obtained from recent experiments with a 40 ke[illegible] 2 μs unbunched electron beam injected directly into the linac from a thermionic gun shows acceleration of the electrons by the structure to various energies. Maximum acceleration upto 3.5 MeV has been measured using a bending magnet energy spectrometer with about 4 MW of microwave power going into the structure. In this paper we discuss the development of the structure, results obtained from the acceleration experiments, and our plans for the future.

MOP33

A Flat Beam Electron Source for the TESLA Linear Collider

P. Piot (FNAL, Batavia, Illinois)

We present a concept for an electron injector, for the TESLA linear collider, capable of producing an electron beam with parameters similar to those produced downstream of the electron damping ring in the present design (with a charge of 3.2 nC). The injector design is based on the round-to-flat beam transformation of an incoming angular-momentum-dominated electron beam. In contrast to the TESLA linear collider nominal design, our setup precludes the use of a damping ring for the electron injector. We compare the performances of our flat beam photo-injector with those of the nominal TESLA design.

Funding: Work supported by the US department of Energy Under Contract No. DE-AC02-76CH03000

MOP34

Injector Linac Upgrade for the BEPCII Project

S.H. Wang (IHEP Beijing, Beijing)

BEPCII- an upgrade project of Beijing Electron P[illegible] Collider (BEPC) is a factory type e^+e^- collider. It requests its injector linac to have the higher beam energy (1.89 GeV) for on-energy injection and the higher beam current (40 mA e^+ beam) for higher injection rate (≥50 mA/min). The low beam emittance (1.6 π·mm·mrad for e^+ beam, and 0.2 π·mm·mrad for 300 mA e^- beam) and low beam energy spread (±0.5%) are also requested to meet the storage ring acceptance. Hence the original BEPC injector linac must be upgraded to have a new electron gun with its complete tuning system, a new positron source with a flux concentrator, a new RF power system with its phasing loops and a new beam tuning system with orbit correction and optics tuning devices. These new components have been designed, fabricated, tested and now being installed in their final positions, which are described in this paper. The beam commissioning is expected to start from the October of 2004.

Funding: Institute of High Energy Physics, Chinese Academy of Sciences,Beijing 100039, China.

MOP35

The Research of a SW Accelerating Structure with Small Beam Spot

X. Yang (CAEP/IAP, Mianyang, Sichuan)

A new kind of on-axis coupled biperiodic standing-wave (SW) accelerating structure has been built for a 9 MeV accelerator. The research progress was introduced in this paper, it includes the choice of the accelerating structure, the analysis of electron beam dynamics, the tuning of the cavity, the measurement of the accelerating tube and the powered test. The small beam spot is the most interesting feature of this accelerating structure, the diameter of the beam spot is 1.4 mm. This accelerator has been used for the x photons generation and the x-ray dose rate is about 3400 rad/min/m.

MOP36

Preliminary Study on HOM-Based Beam Alignment in the TESLA Test Facility

N. Baboi, H. Schlarb (DESY, Hamburg) O. Napoly (CEA/DSM/DAPNIA, Gif-sur-Yvette) R. Paparella (CEA/DAPNIA-SACM, Gif-sur-Yvette Cedex)

The interaction of the beam with the higher order modes (HOM) in the TESLA cavities has been studied in the past at the TESLA Test Facility (TTF) in order to determine whether the modes with the highest loss factor are sufficiently damped. The same modes can be used actively for beam alignment. At TTF the beam alignment based on the HOM signals is planned to be studied in the first cryo-module, containing 8 accelerating cavities. One of several modes with higher loss factor will be used. Its polarization has to be determined. The options to use single bunches or bunch trains will be analyzed. The results will be discussed in this paper.

MOP37

Optimization of Positron Capture in NLC

Y.K. Batygin (SLAC, Stanford)

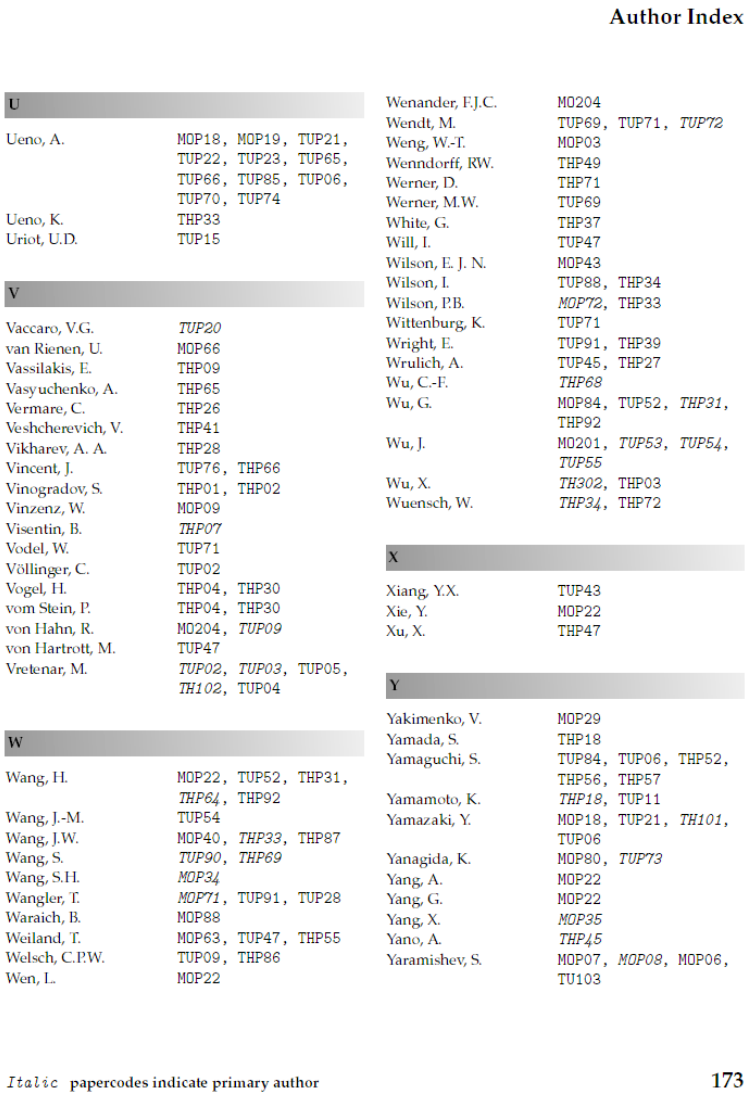
In the Next Linear Collider design, the positron capture system includes a positron production target, a flux concentrator, and a linac to accelerate positrons up to 1.9 GeV, the injection energy of the positron pre-damping ring. Two schemes for positron production have been studied:

a. a conventional approach with a 6.2 GeV electron beam interacting with a high-Z target and
b. polarized positron production using polarized photons generated in a helical undulator by a 150 GeV electron beam which then interact with a positron production target.

The capture system has been optimized to insure high positron yield into the 6-dimensional acceptance of the pre-damping ring. Various parameters affecting the positron capture have been analyzed, including: positron deceleration after the flux concentrator, transverse and longitudinal electron beam sizes for positron generation, energy compression after acceleration, etc. As a result of these optimization studies, the positron yield in the conventional scheme has been increased from 1.0 to at least 1.5 and for the polarized positron scheme from 0.25 to 0.30 while maintaining 60% positron polarization.

Funding: Work supported by the US Department of Energy, contract number DE-AC03-76SF00515.

ConTEXt export for *Abstract booklet* (Author Index)



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ConTEXt export for *Abstract booklet* (Program schedule)

Program

Wednesday, August 18, 2004

08:30 – 10:30 **WE1 — Wednesday Morning Session**
Session Chair: M. White (ANL, Argonne, Illinois)

WE101 **Gradient Limitations for High-Frequency Accelerators**
S. Doebert (SLAC, Stanford)
WE102 **State of the Art SRF Cavity Performance**
L. Lilje (DESY, Hamburg)
WE103 **State of the Art in RF Control**
S. Simrock (DESY, Hamburg)
WE104 **State of the Art Electron Bunch Compression**
P. Piot (FNAL, Batavia, Illinois)

10:30 – 11:00 **Coffee Break**

11:00 – 12:20 **WE2 — Wednesday Late Morning Session**
Session Chair: M. Poole (CCLRC/DL/ASTeC, Daresbury, Warrington, Cheshire)

WE201 **Results from the Initial Operations of the SNS Front End and DT Linac**
V. Aleksandrov (ORNL/SNS, Oak Ridge, Tennessee)
WE202 **Recent Results in the Field of High Intensity CW Linac Development for RIB Production**
A. Pisent (INFN/LNL, Legnaro, Padova)
WE203 **Challenges of Linac Driven Light Sources**
C. Bocchetta (ELETTRA, Basovizza, Trieste)
WE204 **PAL Linac Upgrade for a 1-3 Å XFEL**
J-O. Oh (POSTECH, Pohang) Y. Kim (DESY, Hamburg) W. Namkung (POSTECH, Pohang, Kyungbuk)
WE205 **KEKB Injector Linac and Upgrade for Super-KEKB**
S. Michizono (KEK, Ibaraki)

12:40 – 21:00 Lunch and Outing

Thursday, August 19, 2004

08:30 – 10:30 **TH1 — Thursday Morning Session**
Session Chair: S.O. Schriber (NSCL, East Lansing, Michigan)

TH101 **Status of the J-PARC Linac, Initial Results and Upgrade Plan**
Y. Yamazaki (JAERI/LINAC, Ibaraki-ken)
TH102 **Overview of High Intensity Linac Programs in Europe**
M. Vretenar, R. Garoby (CERN, Geneva)
TH103 **Workshop on High Gradient RF at Argonne Oct 7 - 9 2003**
J. Norem (ANL, Argonne, Illinois)

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Program

- some manual work (SPMS doesn't know about coffee breaks)

Abstract booklet (Production Notes)

Production Notes

The LINAC2004 abstract booklet was produced using a number of *Open Software* tools and newly developed scripts.

The LINAC2004 conference uses the SPMS database (author: Matt Arena, FermiLab) of the JACoW Collaboration for abstract and paper submission from the beginning.

The contents of the database has been exported to XML, providing all data necessary for the batch production of abstract booklet, proceedings and consistent conference web pages, and therefore they comprise of abstracts for the contributions, submitted papers, affiliation data of authors, and so forth.

The generated XML file consisted of approximately 38 000 lines of meta data describing each paper contribution. A PERL script was developed to read this XML file and transform it to `<html>`, \ConTEXt, and command files, providing all necessary means to generate the proceedings web site, abstract booklet, and conference proceedings.

A script run produces 1064 pages for the conference web site (`http://bel.gsi.de/linac2004/`). These pages consist of lists for *Sessions*, *Authors*, *Keywords*, and *Institutes* with all available cross links. All these pages are coded in UNICODE (`UTF8`), making greek characters and small math formulas in abstracts possible (see for example abstract `MOP20`, `MOP84`, or `THP06`), as well as showing the correct writing of names with accented characters. For alphabetic sorting of author names a rule based method is used honoring accented letters, umlauts, etc.

The final version of the abstract booklet was made using ConTEXt version `2004.6.30` and pdfTEX (version `1.11a-2.1`), design of templates and layout were done with the help of Hans Hagen (CEO of `pragma-ade.nl` and author of ConTEXt).

The scripts are supported by the SPMS (Scientific Program Management System). It will be available from the JACOW (`http://www.jacow.org`) site later this year.

August 2004

Volker RW Schaa

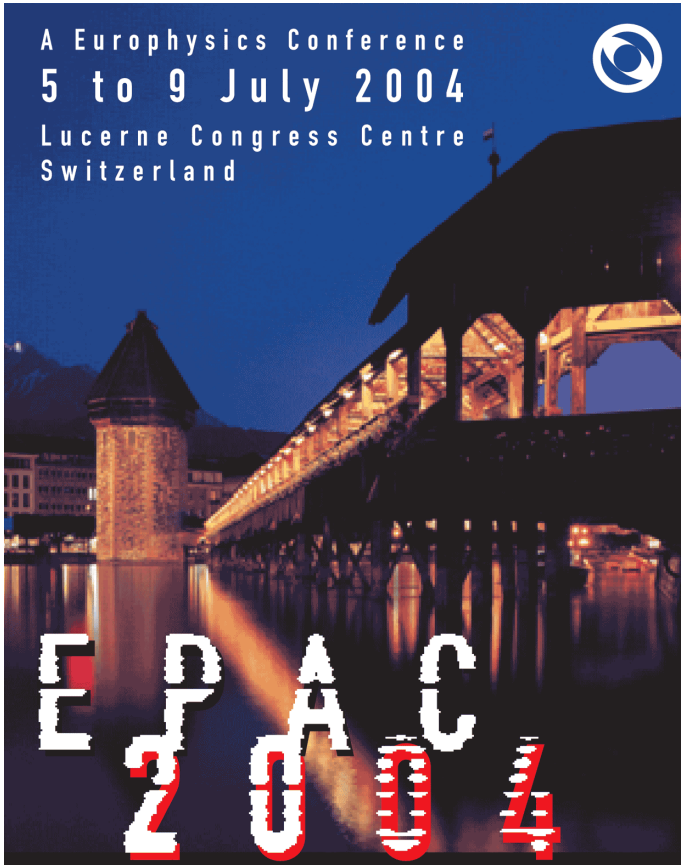
I got very positive responses on these “Production Notes”

- Open Software
- Questions on SPMS
- Nice layout
- Information about “How it was done”
- . . . should always be included

CD production

Have a look at . . .

`http://accelconf.web.cern.ch/accelconf/e04/default.htm`



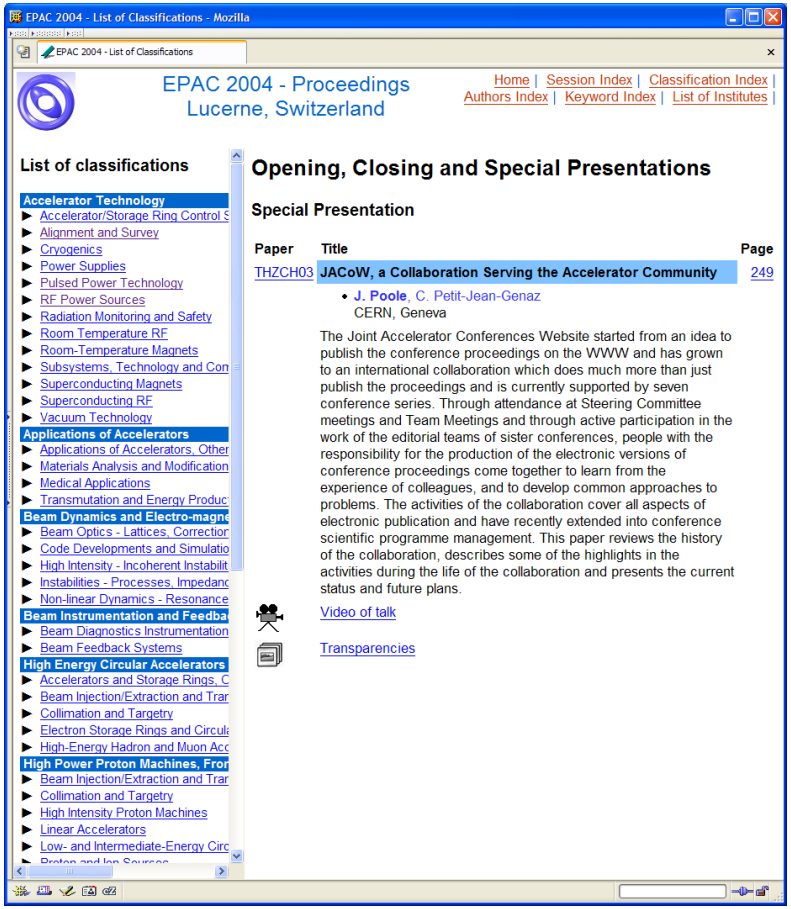
Speed

- XML file for EPAC2004 consists of 188.795 lines
- full web site with
  3268 author files,
  48 session files,
  59 classification files,
  62 keyword files,
  327 institute files
- 936 TEX files,
  1 command file
- 4701 files total with 36 MB
- 17m43s on lowest battery load on a 1.6 GHz notebook

Wishes: Pre-conference preparations

Program committee wanted several lists:

- An Abstract List (Link to Abstract List)
- An interactive form (Oral Posters)(Link to Interactive Form)


EPAC 2004 - List of Classifications - Mozilla
EPAC 2004 - List of Classifications
EPAC 2004 - Proceedings
Lucerne, Switzerland
Home | Session Index | Classification Index |
Authors Index | Keyword Index | List of Institutes |
List of classifications
Accelerator Technology
Accelerator/Storage Ring Control S
Alignment and Survey
Cryogenics
Power Supplies
Pulsed Power Technology
RF Power Sources
Radiation Monitoring and Safety
Room Temperature RF
Room-Temperature Magnets
Subsystems, Technology and Con
Superconducting Magnets
Superconducting RF
Vacuum Technology
Applications of Accelerators
Applications of Accelerators, Other
Materials Analysis and Modification
Medical Applications
Transmutation and Energy Produc
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THZCH03
JACoW, a Collaboration Serving the Accelerator Community
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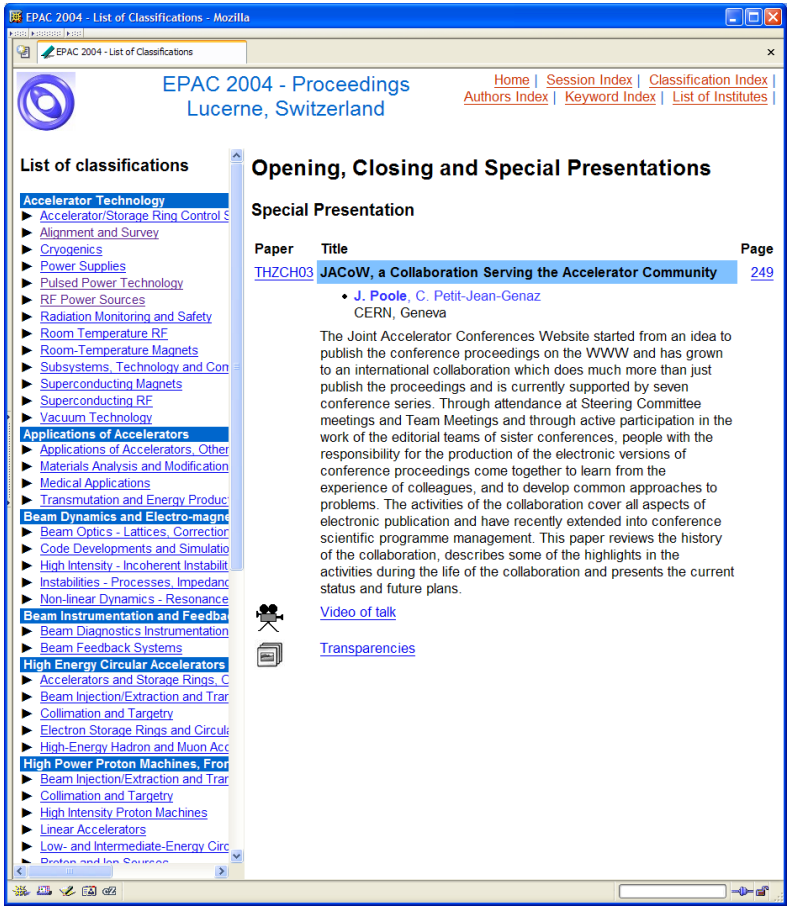
J. Poole, C. Petit-Jean-Genaz
CERN, Geneva
The Joint Accelerator Conferences Website started from an idea to publish the conference proceedings on the WWW and has grown to an international collaboration which does much more than just publish the proceedings and is currently supported by seven conference series. Through attendance at Steering Committee meetings and Team Meetings and through active participation in the work of the editorial teams of sister conferences, people with the responsibility for the production of the electronic versions of conference proceedings come together to learn from the experience of colleagues, and to develop common approaches to problems. The activities of the collaboration cover all aspects of electronic publication and have recently extended into conference scientific programme management. This paper reviews the history of the collaboration, describes some of the highlights in the activities during the life of the collaboration and presents the current status and future plans.
Video of talk
Transparencies

Thank you!



News from the “Wrapper”

Volker RW Schaa

Gesellschaft für Schwerionenforschung mbH
Darmstadt, Germany

JACoW Team Meeting 2004
Knoxville, Tennessee
November 7, 2004