

Scope

- “public presence” parts of www.lepp.cornell.edu
- not
 - document management (DocDB)
 - publications office, drafting shop, elogs, ...
 - “Intranet” documentation (wikis?)

Goals

- Align site organization with areas of long-term lab activity
- Uniform “branding” and navigation
- Usability
- Open up contributions & delegation (no dedicated website team)
- Modern site management & editing tools
- Plan for document longevity, reuse (how relevant is this for just the public pages?)

Site Organization

- Long-term research areas:
 - accelerator physics, experiment elementary particle, theoretical particle, phenomenology(?)
 - see “accelerator physics” pages
- Education & Outreach
- Publications

Branding & Navigation

- CU identity guidelines
 - special cases: CLEO, ERL(?)
- LEPP identity promotion
- Uniform site navigation & decoration
 - identifiable as a single web site
 - default: header with “bread crumb trail”, subject area tabs, left side bar navigation, “boilerplate” footer

Usability

Plan for the common use cases

- general public
- prospective students
- colleagues (researchers & teachers)
- funding agencies
- collaborators
- us
- ...

Enabling Contributors

We have lots of subject area experts, but no dedicated web site team

- delegation of editor, contributor roles
- support for modern authoring tools
 - not locked into one tool suite, if possible!
- publication process--development area, approval process for staging to public site

Site Management

- standard, reusable document formats
- separation of content, appearance & function
 - navigation & headers added on the server
 - document appearance via style sheets
 - globally change appearance, navigation, without affecting content
- importance of document longevity depends on scope?

Specific Proposal

- Plain XHTML content
 - editing, management via WebDAV (Distributed Authoring & Versioning)
- Server side XSLT (XML Stylesheet Language Transforms) for navigation, headers, footers
- CSS style sheets for appearance
- Example: Apache Forrest for presentation, Apache Slide or SubVersion for document management



Cornell University Laboratory for Elementary-Particle Physics

- Research
 - Accelerator Physics
 - Introduction
 - CESR**
 - ERL
 - SRF
 - ILC
 - Graduate Study
 - People
 - Events
 - Experimental Particle Physics
 - Introduction
 - CLEO
 - CMS
 - ILC
 - Graduate Study
 - People
 - Events
 - Theoretical Particle Physics
 - Introduction
 - Theory Research Areas
 - Graduate Study
 - People
 - Events

Accelerator Physics at Cornell: CESR

Cornell Electron Storage Ring

Buried 40 feet beneath Alumni Field on the Cornell University campus is the 768 meter Cornell Electron Storage Ring. CESR is a 12 GeV electron positron collider, representing the culmination of Cornell's 70 year program in accelerator physics.

CESR was completed in 1979 to store beams accelerated by the Cornell Synchrotron (an earlier machine used for fixed target experiments). Using superconducting radio-frequency cavities and pretzel orbits (both technologies developed by Cornell), CESR operated throughout the 1990's as the highest luminosity electron positron collider in the world.

At the end of the last decade, CESR's luminosity was eclipsed by newer accelerators known as b factories. Determined to maintain our rich physics program, Cornell physicists conceived the CESR-c/CLEO-c program. By running CESR at lower energies, the high energy physics focus has shifted from the bottom quark to the lighter charm quark, and will eventually move to the J/ψ . This process continues as CESR is outfitted with new beam optics and instrumentation, and as new techniques for improving performance are developed and perfected.

Superconducting Wigglers

High luminosity is partly achieved by minimizing the transverse beam size. In a storage ring, the size of the beam is reduced, or damped, through the emission of synchrotron radiation. The lower energy of the CESR-c program dramatically reduces the amount of synchrotron radiation emitted. To compensate for this, CESR is being outfitted with 14 superconducting wigglers which were designed and built at Cornell.

Wigglers are elements with alternating magnetic poles causing the beam to "wobble" from side to side. This wobbling produces synchrotron radiation, damping the transverse beam size. In a typical storage ring, the majority of the damping is provided by the bending magnets which direct the beam along a closed, circular path. By contrast, 90% of the radiation damping in CESR-c is provided by the wigglers. Having the only wiggler dominated storage ring in the world provides us with unique opportunities to study the peculiar nonlinear dynamics of wiggler dominated optics and to play a major role in the design of future wiggler dominated damping rings (such as for the proposed Linear