

Software documentation and the EICUG website maintenance

BNL EIC Group Weekly Meeting

Maxim Potekhin

BNL

Nuclear and Particle Physics Software Group

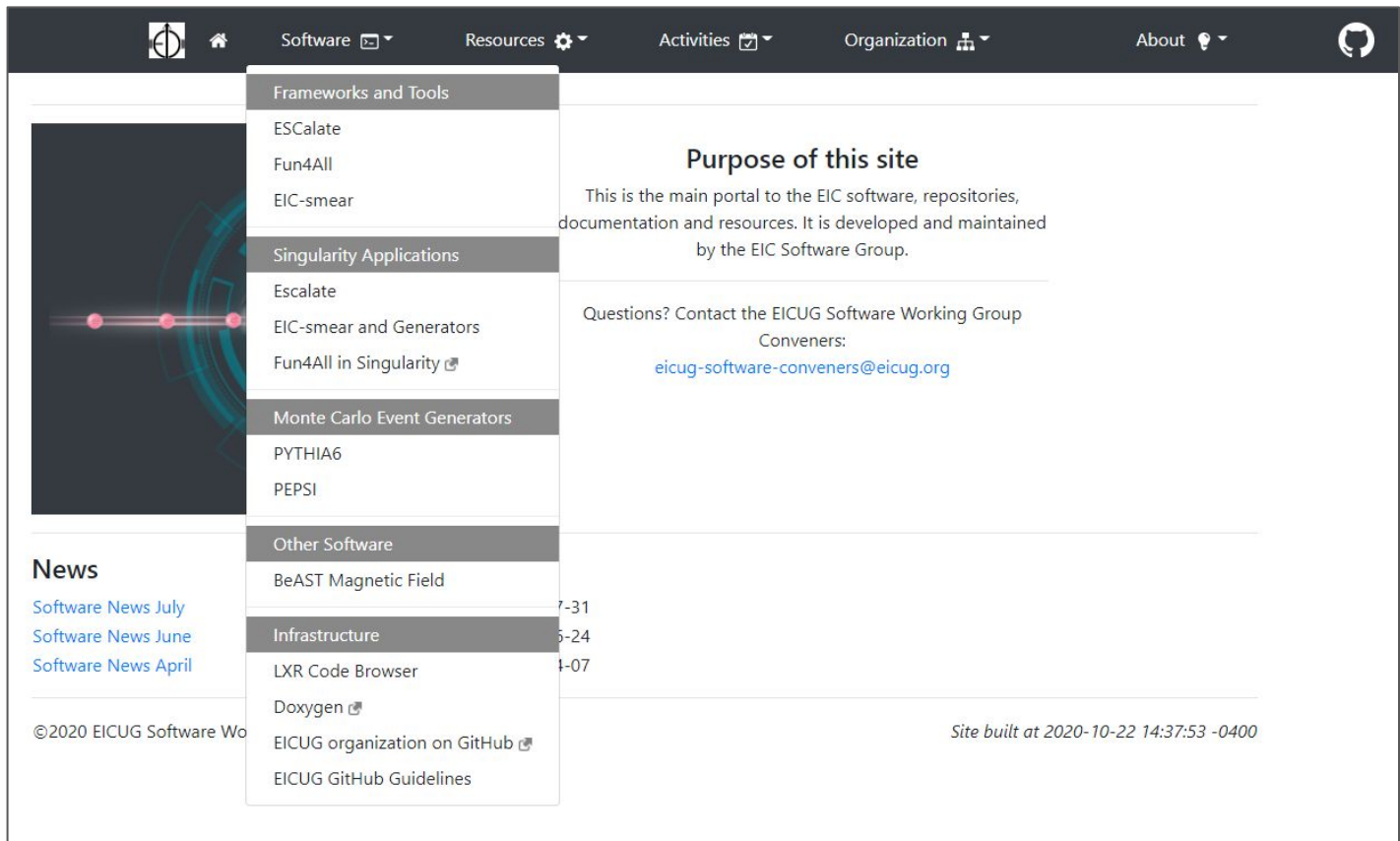
11/12/2020

The EICUG Website (Drupal) - tech work ahead

- <http://www.eicug.org/web/> hosted by BlueHost
- Platforms updates (e.g. PHP) are enforced by the hosting company
 - Which often trigger a necessary Drupal upgrade/update
- Recently updated to PHP 7.2 (since 7.4 produced errors)
- Drupal/PHP version compatibility matrix is not very friendly
- Migration from D7 to D8 is not simple ...stay tuned
- The best long-term solution would be migration to the platform used by the Software Group: <https://eic.github.io/>
- It's great, secure, fast and maintenance-free but takes away the WYSIWYG editor for the most part... so it's "just a thought"

Software documentation (EICUG Software website)

<https://eic.github.io/>



The screenshot displays the EICUG Software website interface. At the top, a dark navigation bar contains icons for home, Software, Resources, Activities, Organization, and About, along with a GitHub logo. A dropdown menu is open under the 'Software' tab, listing categories and specific tools:

- Frameworks and Tools
 - ESCalate
 - Fun4All
 - EIC-smear
- Singularity Applications
 - Escalate
 - EIC-smear and Generators
 - Fun4All in Singularity
- Monte Carlo Event Generators
 - PYTHIA6
 - PEPSI
- Other Software
 - BeAST Magnetic Field
- Infrastructure
 - LXR Code Browser
 - Doxygen
 - EICUG organization on GitHub
 - EICUG GitHub Guidelines

The main content area features a large image on the left and text on the right. The text includes the heading "Purpose of this site", a paragraph describing the site as the main portal to EIC software, and contact information for the EICUG Software Working Group: "Questions? Contact the EICUG Software Working Group Conveners: eicug-software-conveners@eicug.org".

At the bottom left, there is a "News" section with links for "Software News July", "Software News June", and "Software News April". The footer contains the copyright notice "©2020 EICUG Software Wo" and the build timestamp "Site built at 2020-10-22 14:37:53 -0400".

The EICUG Software website status

- It's been active for a few months now
 - Stable platform, with the content being continuously developed (of course)
 - Superior to Drupal or Wiki for software documentation
 - A community-wide resource, fosters common development (with JLab and others)
- Content is being migrated from other sources, including the BNL Wiki
 - Contingent on the available effort (it does require work)
 - Items already migrated from the Wiki are linked to pages on the new site
- Examples:
 - Pythia, PEPSI
 - Candidate: BeAGLE
- If some of the material becomes less relevant or needs an update, the migration is an excellent way to do that and a checkpoint
- The new web platform comes with solid version control (GitHub)
- Ideally the documentation is not fragmented (Wiki vs something else)

Wiki: the Simulations page

Simulations

The EIC task force has a large number of simulation tools available for investigating different types of physics processes. Unless noted otherwise, these can be accessed from [/afs/rhic.bnl.gov/eic/PACKAGES](https://afs.rhic.bnl.gov/eic/PACKAGES).

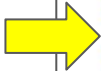
Contents [\[hide\]](#)

- 1 Event Generators
- 2 Detector simulations
- 3 Manuals
- 4 Helpful/Important Links
- 5 MC Analysis Techniques
 - 5.1 How to get a cross section (for non-BeAGLE MC)
 - 5.2 How to get a cross-section for BeAGLE
 - 5.3 How to get a cross-section for BeAGLE+GCF
 - 5.4 How to scale to the MC luminosity to the luminosity we want for the measurement
 - 5.5 Example: reduced cross section
 - 5.6 High-Statistics BeAGLE Simulation

Event Generators

The following event generators are currently available:

- ep
 - DJANGO: (un)polarised DIS generator with QED and QCD radiative effects for NC and CC events.
 - MILOU: A generator for deeply virtual Compton scattering (DVCS), the Bethe-Heitler process and their interference.
 - PYTHIA: A general-purpose high energy physics event generator.
 - PEPSI: A generator for polarised lepton production.
 - RAPGAP: A generator for deeply inelastic scattering (DIS) and diffractive $e + p$ events.
- eA
 - BeAGLE: Benchmark eA Generator for LEpton production - a generator to simulate ep/eA DIS events including nuclear shadowing effects (based on DPMJetHybrid)
 - eSTARlight: Monte Carlo that simulates coherent vector meson photo- and electro-production in electron-ion collisions.



Zenodo

- For a general overview of Zenodo in one of our weekly meetings see:
<https://indico.bnl.gov/event/8667/>
- The BNL instance has been online for ~3 months
- <https://eic-zenodo.sdcc.bnl.gov>
- You need a BNL (or another federated CILogon-enabled) account to upload
 - <https://indico.bnl.gov/event/8776/>
- For technical and policy reasons, we can't manage a "community" (i.e. a curated collection of EIC materials) on that service
- No real DOIs at BNL but you can still share a link
- Keywords make a world of difference (compared to DocDB, Dropbox etc)
- Contact Jerome and Carlos for more detail... and try some real world uploads useful for your work

Recent HEPData@RHIC developments

- STAR has been a prolific HEPData contributor for a long time
- A more focused effort in PHENIX in the past 6 months, good progress
- A RHIC-wide workshop: <https://indico.bnl.gov/event/8843/overview>
- If you have a paper in the pipeline and would like to preserve data used in plots (in a downloadable format) please talk to me
 - A good thing to do from many viewpoints: discoverability, preservation, PR, agency reviews
 - Will have to adopt this practice in the long term anyway
 - An INSPIRE ID is required

Summary

- The EICUG website upkeep will take effort
 - Can change the platform but switch is not likely
- Migration of software documentation from the BNL Wiki to the EICUG software website started, what are the expectations, requirements, plans?
- Zenodo instance at BNL is available for use, with a few minor caveats
- HEPData - used in STAR and PHENIX, any interest in the group?