LCLS-II Online S2E Simulation Repository

This is:

- To **share** current design files w/ LCLS-II collaboration

- For **final**, previously presented simulations

- With minor support for in-progress design files

- To provide **organization** for key simulations

This is **not** for:

- MAD decks (already exists, separate)

- Actively exchanging preliminary designs

- Archive purposes

Repository Permissions

AFS-based UNIX Web Share

- **Read Permit:** World wide, public read access (all are welcome)

- **Write Permit:** SLAC UNIX acc't + permit req'd for write access

- **Management:** Use favorite SSH/SCP/FTP tools for transfer

- To write, please get SLAC UNIX account, then for permission contact
  - Tim Maxwell (*tmaxwell@slac.stanford.edu*) or
  - Gabe Marcus (*gmarcus@slac.stanford.edu*)
  - Permissions issued per simulation package (Astra, Genesis, etc.), please indicate access desired

Where

Public browser access

`http://www.slac.stanford.edu/grp/lcls/lcls-2/ap/sims`

UNIX access (acc't required), SSH/SCP to root path

`[USER]@flora.slac.stanford.edu:/afs/slac.stanford.edu/www/grp/lcls/lcls-2/ap/sims`

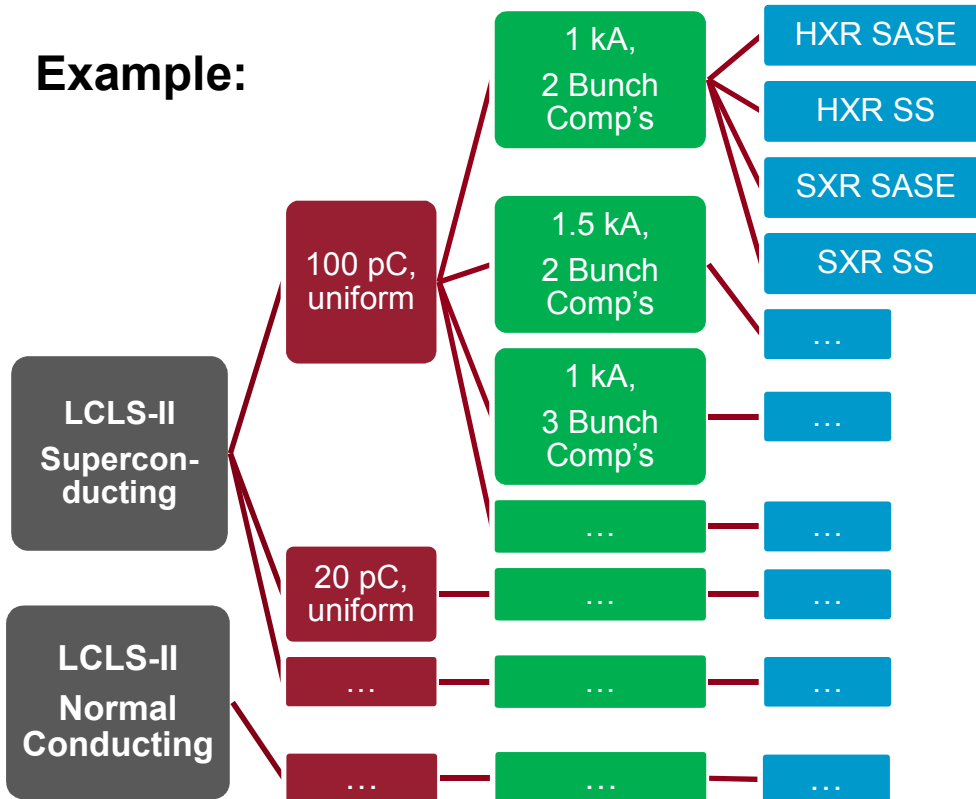## Official design paths are structured as

/ SC/NC — **/Injector** — **/Linac** — **/Undulator**

Organization: Machine-path approach

- Connect simulation combinations as a logical tree, basic path structure:

$$\boxed{\text{\\SC/NC}} — \boxed{\text{\\Injector}} — \boxed{\text{\\Linac}} — \boxed{\text{\\Undulator}}$$

- "Follow the electron," choose config at each level to proceed through available branches

Example:

- Possibly overwhelming, but…
- Path describes whole machine
- No input/output ambiguity
- Less redundancy of input files
- If one sim. is changed, clear which inherit changes

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Some initial folders

The following will be initially created for the superconducting linac:

`../sims/SC/astra_186MHz_300pC_unif/eleg_2BC_1000A`

`../sims/SC/astra_186MHz_300pC_unif/eleg_3BC_1000A`

`../sims/SC/astra_186MHz_100pC_unif/eleg_2BC_1000A`

`../sims/SC/astra_186MHz_100pC_unif/eleg_3BC_1000A`

`../sims/SC/astra_186MHz_20pC_unif/eleg_2BC_750A`

`../sims/SC/astra_186MHz_20pC_unif/eleg_3BC_750A`

Each of these will have final undulator subfolders: `../gene_hxr_sase`
`../gene_hxr_ss`
`../gene_sxr_sase`
`../gene_sxr_ss`

The following will initially be created for the Cu linac:

`../sims/NC/astra_150pC_unif/eleg_3000A_2p5GeV/gene_hxr_sase_1keV`

`../sims/NC/astra_150pC_unif/eleg_3000A_8GeV/gene_hxr_sase_9keV`

`../sims/NC/astra_150pC_unif/eleg_3000A_12GeV/gene_hxr_sase_17keV`

`../sims/NC/astra_150pC_unif/eleg_3000A_15GeV/gene_hxr_sase_25keV`

Sharing other work

Limited `../sims/scratch/` space available

- When you sign up, we'll make you a folder

  `../sims/scratch/[YOURUSERNAME]`
- For sharing near-complete or proposed designs
- *Note:* Scratch is world-wide, publicly viewable
- Write privileges only for you

Adding to official path for non-existent branches

Structure and permissions management are needed in the official branches…

- Upload everything to a folder in your `scratch` space
- Notify us you would like folder moved to official listing
    - Tim Maxwell (*tmaxwell@slac.stanford.edu*) or
    - Gabe Marcus (*gmarcus@slac.stanford.edu*)

- Please note simulation used for input, where applicable

Global supporting simulation files

Within `/sims` there is `/support` for global support files, e.g.:

```
../sims/support/astra

../sims/support/elegant

../sims/support/genesis
```

Notes and links to the software used throughout get posted here along with any custom files (e.g., wake files)

Other Guidelines

- Contact/editor to be posted for each folder, responsible for:

  - Uploading reviewed results and revisions
  - Answering questions about files

- Decks and outputs all in one path

  - e.g.: `/SC/astra_186MHz_300pC_unif/eleg_2BC_1000A/`.
    - Only contains elegant files
    - Subfolders reserved for subsequent Genesis simulations (not strictly enforced)

- `scratch` not for use as a "Dropbox"

- Out of date designs will be removed (no archiving)