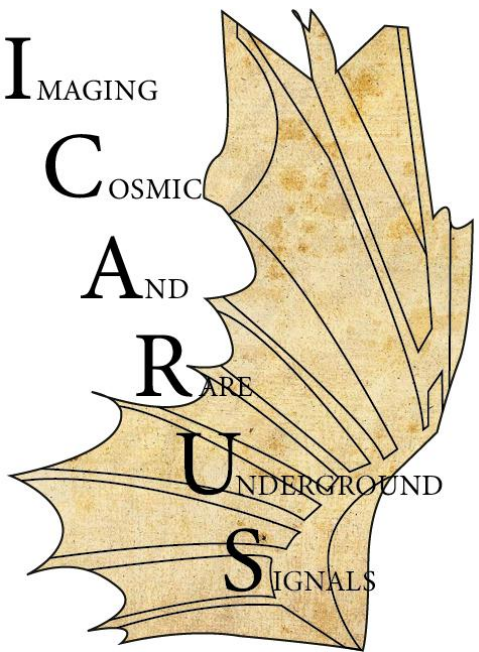


SBN WS ICARUS Production Summary



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**COLORADO STATE
UNIVERSITY**

MC Samples Available for the Workshop

- **ICARUS Calibration Samples**
- **ICARUS GiBUU + Cosmics Sample**
- **ICARUS BNB inclusive GENIE CV Recomb. Var. (0,0)**
- **ICARUS BNB Inclusive GENIE Recomb. Var. (1,0)**
- **ICARUS BNB Inclusive GENIE Recomb. Var. (0,1)**
- **ICARUS BNB Inclusive GENIE Recomb. Var. (3,3)**
- **ICARUS BNB Inclusive GENIE Recomb. Var. (-3,-3)**

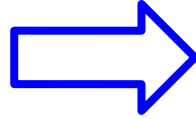
- Request is to make 1M events in total for each sample (except calibration samples)
 - Plan: divide into batches of 100k events
 - First batch of 100k events being available for the workshop
 - Save files in all stages
 - g4, detsim, stage0/1, caf/flatcaf

ICARUS Calibration Samples

- Completed by Mike
- Two samples made
 - corsika_2Dsim_1Dreco
 - corsika_2Dsim_2Dreco
- Saved stage1 and calibration ntuples
- dir: /pnfs/sbn/data_add/sbn_fd/mc/SBN_WS_July2023/calib_production
- See Mike's Workshop [introduction talk](#) for more information

ICARUS GiBUU + Cosmics

University of Texas at
Arlington group provided
GiBUU generated sample



overlay	prodcorsika_overlay_protononly_icarus.fcl
g4	standard_g4_icarus_sce.fcl
detsim	detsim_2d_icarus.fcl
stage0	stage0_run2_icarus_mc.fcl
stage1	stage1_run2_icarus_MC.fcl
caf	cafmakerjob_icarus_detsim2d.fcl

- Started running in the middle of the week
- Running using icaruscode v09_72_00_04p01
- First batch done up to g4 stage
 - ~24k events
- Later stages should be starting today for these events
- Samweb and directories will be posted on [production samples slides](#)

ICARUS BNB inclusive GENIE Recomb. Var.

gen	prodcorsika_bnb_genie_protononly_icarus.fcl
largeant	standard_g4_icarus_sce_largeant.fcl
g4ion	
detsim	detsim_2d_icarus.fcl
stage0	stage0_run2_icarus_mc.fcl
stage1	stage1_run2_icarus_MC.fcl
caf	cafmakerjob_icarus_detsim2d.fcl



CV Recomb. Var. (0,0)	standard_g4_icarus_sce_ionization.fcl
Recomb. Var. (1,0)	standard_g4_icarus_sce_ionization_recomb10.fcl
Recomb. Var. (0,1)	standard_g4_icarus_sce_ionization_recomb01.fcl
Recomb. Var. (3,3)	standard_g4_icarus_sce_ionization_recomb33.fcl
Recomb. Var. (-3,-3)	standard_g4_icarus_sce_ionization_recomb-3-3.fcl

- Running icaruscode v09_72_00_04p01

ICARUS BNB inclusive GENIE Recomb. Var. Status

Campaign	Request	Generated	icaruscode	Status
Genie CV Recomb. Var. (0,0)	100k	>100k	v09_72_00_04p01	Done
Genie Recomb. Var. (1,0)	100k	>100k	v09_72_00_04p01	Done
Genie Recomb. Var. (0,1)	100k	~97k	v09_72_00_04p01	Running
Genie Recomb. Var. (3,3)	100k	~93k	v09_72_00_04p01	Running
Genie Recomb. Var. (-3,-3)	100k	>100k	v09_72_00_04p01	Done

- Finished 3/5 campaigns
 - Samweb and directory information in backup slides

MC Samples Planned for After Workshop

- ICARUS BNB inclusive GENIE Recomb. Var. (1,1)
- ICARUS BNB Inclusive GENIE Recomb. Var. (-1,-1)
- ICARUS BNB Inclusive GENIE Det (Diffus.) Var (1,0)
- ICARUS BNB Inclusive GENIE Det (Diffus.) Var (-1,0)
- ICARUS BNB Inclusive GENIE Recomb. Var. (1,-1)
- ICARUS BNB Inclusive GENIE Recomb. Var. (-1,1)
- ICARUS BNB Inclusive GENIE Recomb. Var. (3,-3)
- ICARUS BNB Inclusive GENIE Recomb. Var. (-3,3)
- ICARUS BNB inclusive GENIE Recomb. Var. (-1,0)
- ICARUS BNB Inclusive GENIE Recomb. Var. (0,-1)

- Request is to make 1M events in total for each sample

ICARUS MC Disk Space Problem

- Problem: samples taking up ~ 350 TB of space \rightarrow 1/3 of SBN Data Pool
- Brought issue up to analysers and they requested to keep stage1 and flatcaf files
- Breaking down storage usage for **one** of the finished samples

```
du -h --max-depth=1 standard_g4_icarus_sce_ionization/batch0_2/  
54G standard_g4_icarus_sce_ionization/batch0_2/caf  
342G standard_g4_icarus_sce_ionization/batch0_2/calibtuples  
19T standard_g4_icarus_sce_ionization/batch0_2/g4ion  
34T standard_g4_icarus_sce_ionization/batch0_2/detsim  
23T standard_g4_icarus_sce_ionization/batch0_2/stage0  
25T standard_g4_icarus_sce_ionization/batch0_2/stage1  
70G standard_g4_icarus_sce_ionization/batch0_2/flatcaf  
100T standard_g4_icarus_sce_ionization/batch0_2/
```

- Keeping 100k events of stage1 files ~ 25 TB \rightarrow 1M events would be ~ 250 TB
- Keeping just stage1 files for the 15 campaigns ~ 3.75 PB
 - We don't have the space available to store all stage1 files
- We need to think about solving this issue before continuing with current and future MC campaigns

Backup

ICARUS BNB inclusive GENIE CV Recomb. Var. (0,0)

- Events available: 100800
- dir:
`/pnfs/sbn/data_add/sbn_fd/mc/SBN_WS_July2023/poms_production/2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var/v09_72_00_04p01/standard_g4_icarus_sce_ionization/batch0_2/`
- Samweb:
`icaruspro_production_v09_72_00_04p01_2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var_standard_g4_icarus_sce_ionization_batch0_2_<FILE_TYPE>`

`<FILE_TYPE>=g4ion, detsim, stage0, stage1, caf, flatcaf, calibtuple`

ICARUS BNB inclusive GENIE Recomb. Var. (1,0)

- Events available: 100050

- dir:

```
/pnfs/sbn/data_add/sbn_fd/mc/SBN_WS_July2023/poms_production/2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var/v09_72_00_04p01/standard_g4_icarus_sce_ionization_recomb10/batch0/
```

- Samweb:

```
icaruspro_production_v09_72_00_04p01_2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var_standard_g4_icarus_sce_ionization_recomb10_batch0_<FILE_TYPE>
```

<FILE_TYPE>=g4ion, detsim, stage0, stage1, caf, flatcaf, calibtuple

ICARUS BNB inclusive GENIE Recomb. Var. (0,1)

- Events available: 97590
- dir:
`/pnfs/sbn/data_add/sbn_fd/mc/SBN_WS_July2023/poms_production/2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var/v09_72_00_04p01/standard_g4_icarus_sce_ionization_recomb10/batch0/`
- Samweb:
`icaruspro_production_v09_72_00_04p01_2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var_standard_g4_icarus_sce_ionization_recomb10_batch0_<FILE_TYPE>`

`<FILE_TYPE>=g4ion, detsim, stage0, stage1, caf, flatcaf, calibtuple`

ICARUS BNB inclusive GENIE Recomb. Var. (3,3)

- Events available: 93330

- dir:

```
/pnfs/sbn/data_add/sbn_fd/mc/SBN_WS_July2023/poms_production/2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var/v09_72_00_04p01/standard_g4_icarus_sce_ionization_recomb33/batch0/
```

- Samweb:

```
icaruspro_production_v09_72_00_04p01_2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var_standard_g4_icarus_sce_ionization_recomb33_batch0_<FILE_TYPE>
```

<FILE_TYPE>=g4ion, detsim, stage0, stage1, caf, flatcaf, calibtuple

ICARUS BNB inclusive GENIE Recomb. Var. (-3,-3)

- Events available: 101070

- dir:

```
/pnfs/sbn/data_add/sbn_fd/mc/SBN_WS_July2023/poms_production/2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var/v09_72_00_04p01/standard_g4_icarus_sce_ionization_recomb-3-3/batch0/
```

- Samweb:

```
icaruspro_production_v09_72_00_04p01_2023A_SBN_WS_ICARUS_BNB_inclusive_GENIE_Var_standard_g4_icarus_sce_ionization_recomb-3-3_batch0_<FILE_TYPE>
```

<FILE_TYPE>=g4ion, detsim, stage0, stage1, caf, flatcaf, calibtuple

Reminder: SBN Production Request Form

- To submit a request to production, please fill the [SBN Production Request Form](#)
- Basic information required:
 - Person responsible for the sample, email, name, description, detector, deadline, priority
- Important information needed:
 - Dataset to use (if one already exists)
 - fcl files used for each stage to run
 - icaruscode version
- Also very important to test workflow and make sure it runs correctly
- You can reach out to the production team on getting help on filling out this form