

ILD MC-2020 Production

Current status and file loss by mistake

ILD Software/Analysis meeting

Akiya Miyamoto (KEK)

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Overview of mc-2020 production

- Goal of mc-2020 : High statistic samples for physics studies
 - 250 GeV, SetA parameter, Whizard-2.8.5
 - Int lumi.: 2f/4f 5 ab⁻¹ ; higgs inc./excl. 0.5~0.1M, others 1ab⁻¹
 - iLCSoft v02-02
 - Mainly ILD_I5_o1_v02. o2 and o3 later, depending on requests
 - SIM and REC files are kept only partially.

Required resources estimated by KEKCC batch

Process type	k Events	KEK CPU days		Data size(GB)		
		Sim	Rec	Sim	Rec	DST
higgs inclusive	7,000	1,585	625	22,544	26,621	646
higgs exclusive	29,400	5,485	1,820	76,796	88,324	2,041
2f_Z_hadronic	992,000	196,311	62,563	2,704,599	3,051,504	72,429
2f_Z_leptonic	188,500	12,569	4,473	168,806	216,940	4,594
3f_Z_hadronic	18,526	6,615	2,354	163,071	251,866	6,001
3f_Z_leptonic	205,895	10,097	3,593	174,672	246,740	5,577
3f_others	340	18	8	215	384	12
4f_large(sw_sl,ww_sl/h,zzorww_h)	281,700	58,175	20,246	943,218	1,082,731	25,784
4f_rest	155,920	23,347	6,134	284,965	337,672	6,832
5f	66	7	2	69	100	3
aa_2f_Z_hadronic.bBB	42,261	1,572	775	21,977	48,486	1,632
aa_2f_leptonic_eB_pB	233,435	3,591	2,476	35,914	126,337	5,179
aa_4f	130	2	2	25	94	4
Total	2,155,173	319,376	105,072	4,596,872	5,477,800	130,733

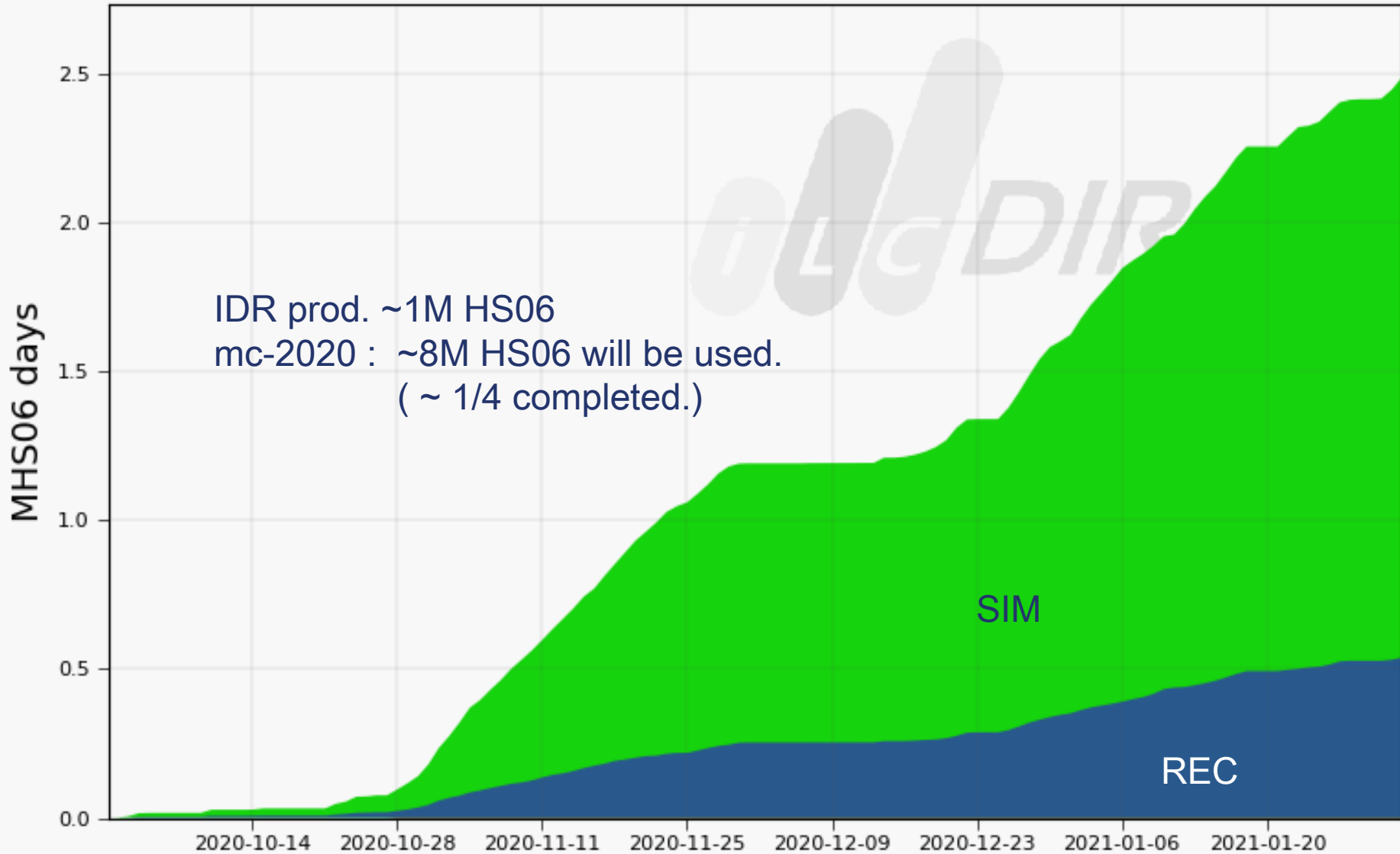
- Total ~ 424 k KEK CPU days, ~ 8.5M HS06 days
- DST size : ~ 130 TB
- ~ 10PB to store all Sim & Rec data → Only small fraction are saved.

Storage capacity available for mc-2020

KEK tape : 600 TB (1200 TB total)

KEK disk 300TB, DESY disk 300 TB (→ 600TB)

Normalized CPU used by JobType 17 Weeks from Week 39 of 2020 to Week 05 of 2021



IDR prod. ~1M HS06
mc-2020 : ~8M HS06 will be used.
(~ 1/4 completed.)

Max: 2.49, Min: 0.00, Average: 1.06, Current: 2.49

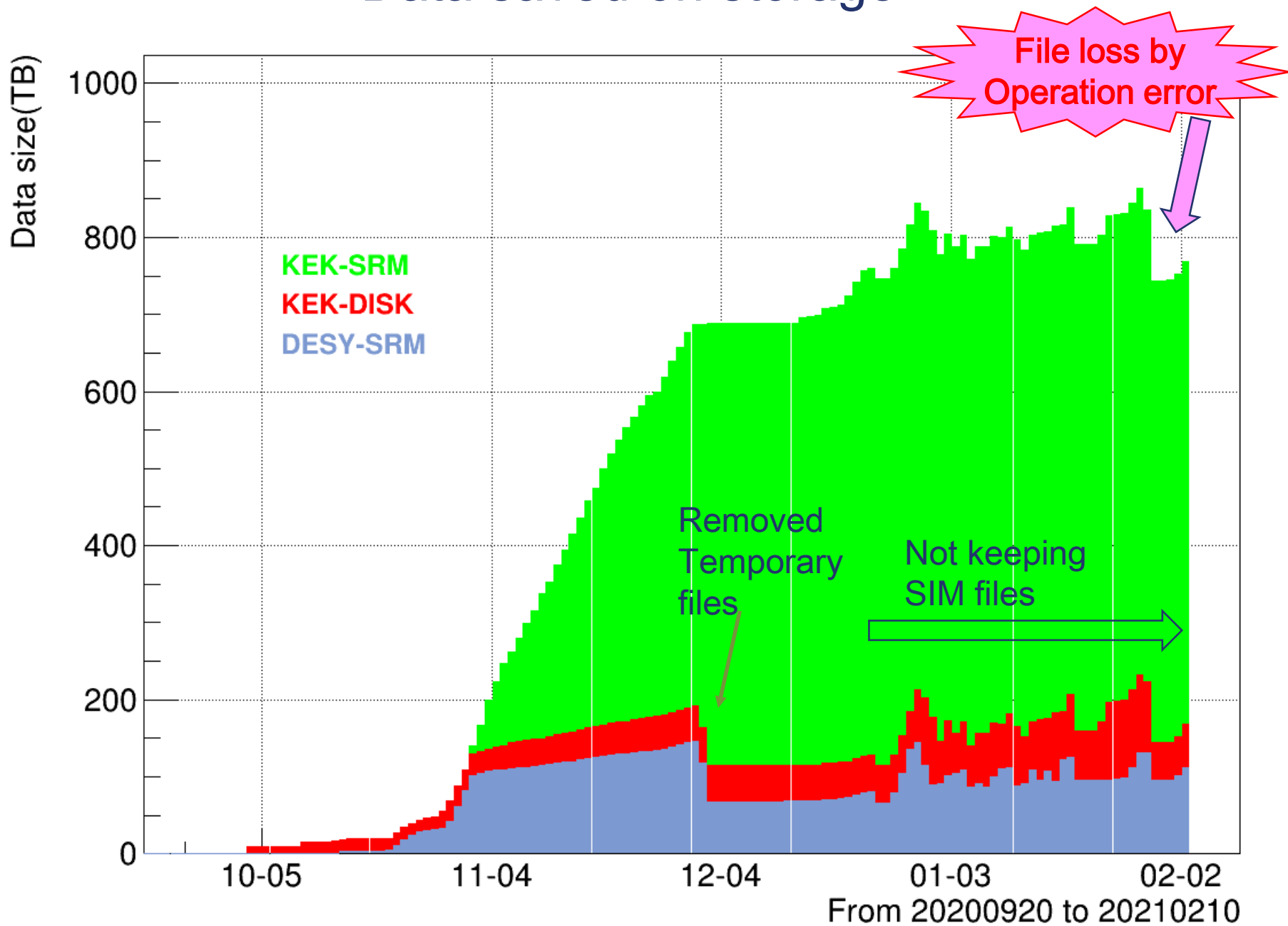
MCSimulation_ILD

1.9 MCRReconstruction_Overlay_ILD

0.5 MCRReconstruction_ILD

0.0

Data saved on storage



Some production files were removed by mistake.

- **SIM and REC files of ELOG 354 and before** (ProdID 15114 and before) were removed unintentionally on **29 Jan.** by a wrong operation, when removing unnecessary log files in ILCDirac.

ELOG URL <https://ild.ngt.ndu.ac.jp/eelog/dbd-prod/>

- **DST merged files were not affected** by this incident.
- Affected processes include
 - **Pre mc-2020 :**
 - Calibration samples : single, 2-jets with o1 and o2 option
 - Test physics samples : higgs, 2f4f, 6f
 - **Early mc-2020 samples** such as : Higgs inclusive, Flavor tag, etc
 - **Background files (aa_lowpt and seeablepairs)**
- Reproduction of removed files
 - **Background files has been re-produced.**
 - Nb events per file was **tripled**, hoping to reduce IO load
 - **Other files : by request.** No huge resource required. Easier to use v02-02.
- **Additional days to complete physics sample** requested by Physics WG. (o1 only)
 - 3f and 2f : up to 1 fb^{-1} ; **~ 20 days**
 - 4f : increase from 1 ab^{-1} to 5 ab^{-1} ; **~ 30 days**
 - 2f : increase from 1 ab^{-1} to 5 ab^{-1} ; **~ 60 days**

Summary of production status (3-Feb-2021)

<https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/prodsum-mc2020.html>

Processes	Status
Higgs inclusive decay	Completed
Higgs exclusive decay	Completed
2f-hadronic	0.6 ab^{-1} (eL.pR), 0.4 ab^{-1} (eL.pR)
2f-leptonic	2.5 ab^{-1}
4f_high Xsect sw/ww_sl, ww/zzorww_h	1 ab^{-1}
Other 4f	Completed
3f_z_l	0.2 ab^{-1} (eL.pB), 0.6 ab^{-1} (eR.pB)
3f_z_h	0.35 ab^{-1}
Other 3f	Completed
5f	Completed
aa_2f, aa_4f	Completed
LCFI calibration	Completed