DC2 Production
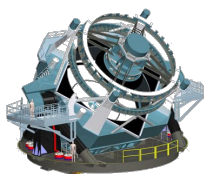
LSST-France
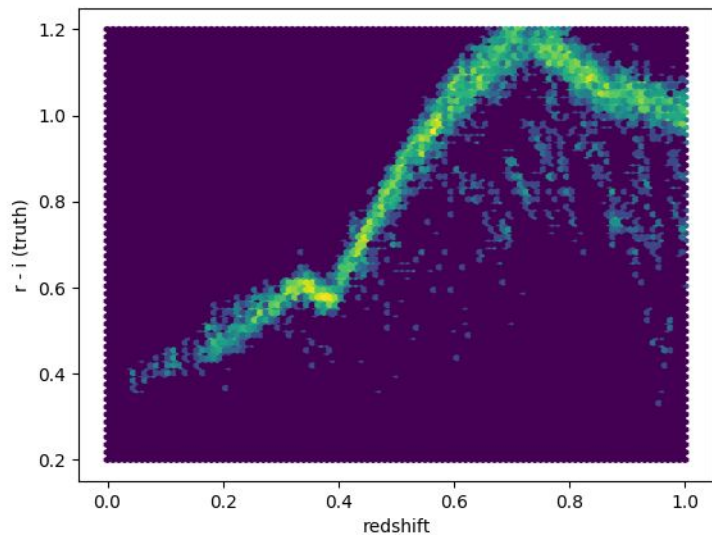
Dominique Boutigny with input from Johann
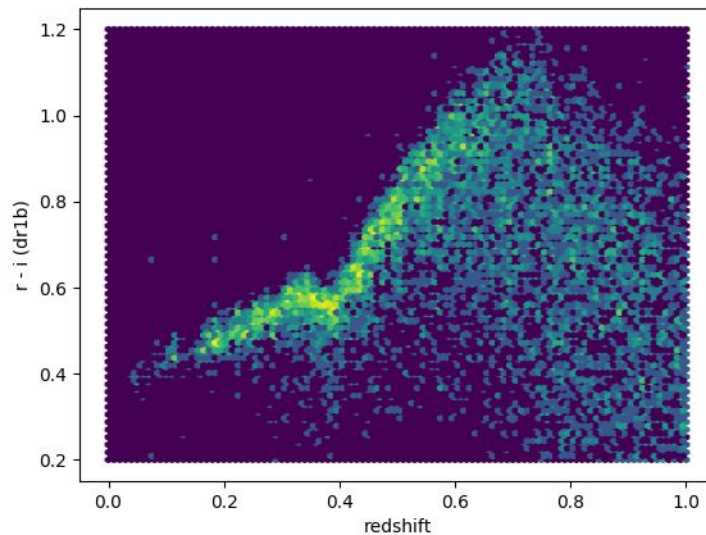
The AGN problem ...

At the time of the DESC collaboration meeting at APC, it was discovered that there was a serious problem with galaxy colors.
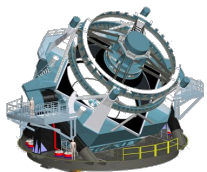
Colors of central galaxies in cluster from E. Rykoff

The AGN problem...

After investigation the problem was tracked down to AGN simulation
- Turned to be impossible to cure afterward in image simulation
- Decide to re-do everything from scratch
  - Without AGN
  - Save a checkpoint file at the end of imSim simulation in order to be able to add the AGN contribution later

Apparently the AGN simulation is now ok
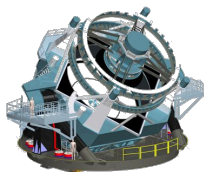
DC2 status - Static sky

imSim:
- year 1 + 2 are done and transferred to CC-IN2P3
- year 3 is done : The few remaining "stragglers" have been ignored
- year 4 (grid) : almost done
- year 5 (grid) : 80% done

Image processing:

- Tracks 3828 & 3829 (y1 + y2) fully processed and available for validation
- DR3 (y1 + y2)
  - calexp done but need to add ~1100 stragglers
  - some issues with coaddition in DDF region

The workflow includes the Metacal pipeline (shear measurements with auto-calibration) from Erin Sheldon
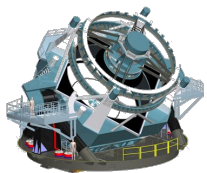
Deep Drilling Field (DDF)

From Katrin Heitmann:

On top of WFD DDF will include:
- unlensed and strongly lensed AGNs
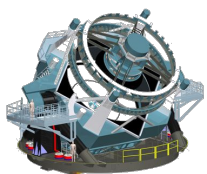- strongly lensed SNe
- strongly lensed galaxies

Open questions on strongly lensed SNe
- May be dropped

These objects will be added to already simulated DDF images, restarting from the checkpoint files


From Matt Wiesner

Recent modifications to the pipeline (from Johann)

- Adding ci_pipe to have calexp level validation plots (w Jim)
  - Probably need to be turned off in future year processing
- Investigating validateDrp
  - With current API, impossible to run it on 1 filter/1 tract over one year of visits : CPU time excess (single core code)
  - Path forward is to change the API to allow config by patch/visit-sensor input (w Michael)
- Functional DIA pipeline ready on SRS (w Dominique F.)
  - Need to include/discuss parallel effort by Bruno
  - Need to run with clear input cases (currently maybe a bug as I have no association, hence "functional")
- DM DPDD toolset tested (with Michael and Hsin-Fang) but not yet used in the pipeline instead of DC2-production scripts : important as place to give feedback to DM
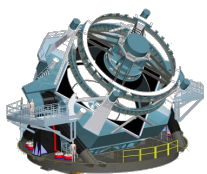
imSim on Grid

- imSim on Grid is now working
  - UK initiative
  - Joined by France - LAPP, CC-IN2P3 and IJCLab soon
  - Using Dirac middleware
  - Write output on a CC-IN2P3 Storage Element
- Spend a lot of time to bring CC-IN2P3 into production
  - Complex to debug
- Unfortunately the imSim wrapper is not very well written
  - Huge memory spike (27 GB for 4 20 MB fits files)
  - Some still unexplained random hanging jobs
    - Probably due to a bad thread handling in python
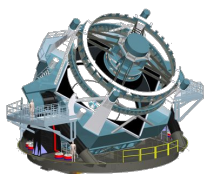
imSim on Grid

CPU usage by Site
10 Weeks from Week 45 of 2019 to Week 04 of 2020
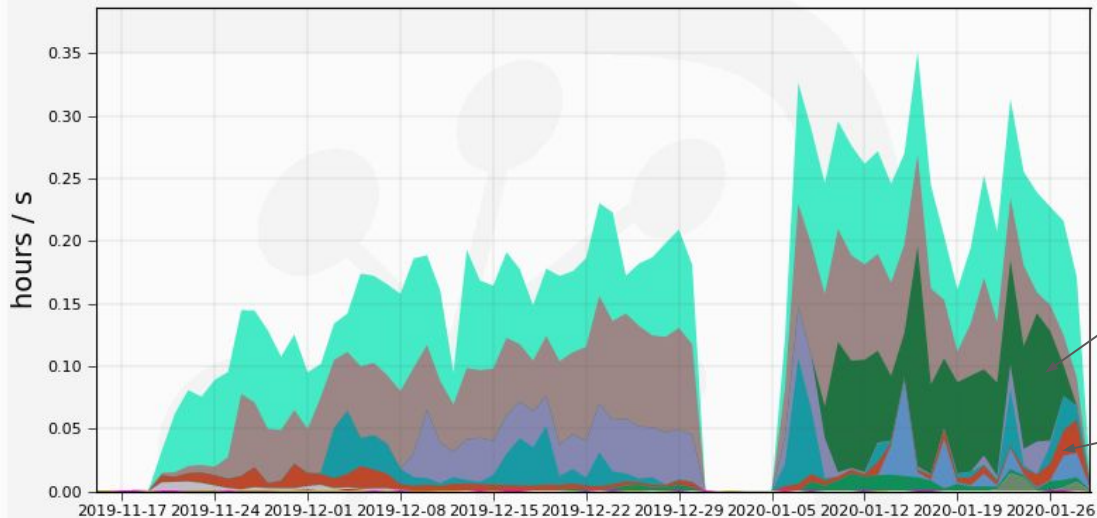
Max: 0.35, Min: 0.00, Average: 0.16, Current: 0.01

LCG.UKI-NORTHGRID-MAN-HEP.uk	36.3%	LCG.UKI-SCOTGRID-ECDF.uk	0.3%
LCG.RAL-LCG2.uk	29.5%	LCG.UKI-NORTHGRID-LIV-HEP.uk	0.1%
LCG.IN2P3-CC.fr	12.2%	VAC.UKI-NORTHGRID-MAN-HEP.uk	0.0%
LCG.UKI-SOUTHGRID-OX-HEP.uk	8.1%	LCG.UKI-SOUTHGRID-BRIS-HEP.uk	0.0%
LCG.UKI-LT2-IC-HEP.uk	6.1%	VAC.UKI-SCOTGRID-GLASGOW.uk	0.0%
LCG.IN2P3-LAPP.fr	3.6%	VAC.UKI-SOUTHGRID-BHAM-HEP.uk	0.0%
LCG.UKI-LT2-QMUL.uk	1.8%	CLOUD.UK-CAM-CUMULUS-backfill.uk	0.0%
LCG.UKI-NORTHGRID-LANCS-HEP.uk	1.5%	CLOUD.RAL-LCG2.uk	0.0%
LCG.UKI-LT2-Brunel.uk	0.5%		

CC-IN2P3

LAPP

Generated on 2020-01-30 14:07:41 UTC

The LSST DESC DC2 Simulated Sky Survey

https://www.overleaf.com/8574729384jttdkyjcbgyq
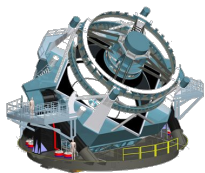
The LSST DESC DC2 Simulated Sky Survey

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ABSTRACT

We describe the simulated sky survey underlying the second data challenge (DC2) carried out in preparation for analysis of the Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST) by the LSST Dark Energy Science Collaboration (LSST DESC). The effort encompasses a full end-to-end approach: starting from