

## Notes from the PCW 2022 PZ Commissioning Session

August 10, 2022

### Photo-z commissioning plans:

- All the annual data releases will have photo-z estimates. There is a roadmap for that.
- 5 Photo-z estimators shortlisted from the submitted LoRs
- Photo-z commissioning team has been setup

### Science Verification and Validation:

- Dithers around deep drilling fields to gather data to train and test for photo-z validation and photometry in general. About LSST 10-20 year depth.
- Community-sourced suggestions for candidate target fields.
- The fields will be decided ~3 months before data taking using LSST Cam.
- A week or two of sustained observations using Comcam can also give ~2sq degrees of similar depth beforehand.

### Science Collaborations:

- Galaxies SC want jointly derived physical parameters along with photo-z
- Galaxies SC has not made any firm plans but intends to use RAIL and PZ validation cooperative to test selected methods.
- Strong Lensing SC benefit from accurate photo-z for lens and source images
- Strong Lensing photo-z mainly affected by pollution from lense light
- DESC is working on the RAIL pipeline to produce and validate photo-z's.
- TVS needs for photo-z overlaps with DESC
- TVS pipelines can only account for point estimates as of now and not PDFs
- TVS will benefit from photo-z that also takes into account the host property
- TVS not sure about the requirements for photo-z accuracy as of now
- AGN photo-zs need special attention.

### Community resources:

- RAIL is code to enable flexible experimentation with photo-z data products, and can be used to build photo-z estimation pipelines
- LIneA is working on photo-z server and training set maker
- LINCC Frameworks providing support software infrastructure

### Discussion and QA:

- Collaboration with other surveys like Euclid: Due to different time scales Euclid can't be incorporated during commissioning. But there is a joint Rubin-Euclid analysis plan.
- Spectroscopic data sets used for baseline: During commissioning use the deep fields like COSMOS and XMM-LSS
- No Rubin-DESI collaboration yet whereas DESI can provide excellent spectra till ~24 mags. LSST would like a flux limited sample of  $i < 25$  but DESI has not been pushed to the limits.

- DESI would like to hear from Rubin about what to prioritize over the next year or two to aid Rubin commissioning
- Joint fitting of redshift and galaxy properties can become very complicated but there is some benefit in having a simple fitting of two or three parameters like redshift and mass.
- Interaction between RAIL and Linea photo-z server can be worked on
- RAIL can be used by other groups for similar goals like inferring stellar distance from colors.
- RAIL can implement multiple photo-z estimators and invite everyone to implement their method. Current work on parallelising RAIL is underway which again can support multiple use cases.