

09-18-19

October 2, 2019

1 Procedure

- Gather SDSS quasar spectra
- Include iron line templates
- Dust correct
- Continuum subtract
- Fit emission line profiles
- Analyze variability of CIV relative to MgII
- Identify spectra with repeat-observations
- Determine effects on black hole masses

2 Gather Spectra

Quasar catalog: https://data.sdss.org/sas/dr14/eboss/qso/DR14Q/DR14Q_v4_4.fits

Quasar catalog data model: https://data.sdss.org/datamodel/files/BOSS_QSO/DR14Q/DR14Q_v4_4.html

“Lite” spectra: https://data.sdss.org/sas/dr14/eboss/spectro/redux/v5_10_0/spectra/lite

Spectra data model: https://data.sdss.org/datamodel/files/BOSS_SPECTRO_REDUX/RUN2D/spectra/PLATE4/spec.html

Platelist file: <https://data.sdss.org/sas/dr14/eboss/spectro/redux/platelist.fits>

Platelist data model: https://data.sdss.org/datamodel/files/BOSS_SPECTRO_REDUX/RUN2D/platelist.html

Explore the quasar catalog and identify spectra that meet the following criteria:

- Include CIV ($\text{\AA}1549$) and MgII ($\text{\AA}2798$) emission lines
- Do not have evidence of quasar Broad Absorption Lines (BALs)
- Have good signal-to-noise (start with $\text{SN} > 2$)
- Have good plate quality
- Are within 1 degree of the plate bore-sight

Download only those spectra to Dodo (likely around 50000 after all cuts are made, but don't quote me on that).