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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 (Å1549) and MgII (Å2798) emission lines
- Do not have evidence of quasar Broad Absorption Lines (BALs)
- Have good signal-to-noise (start with 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).