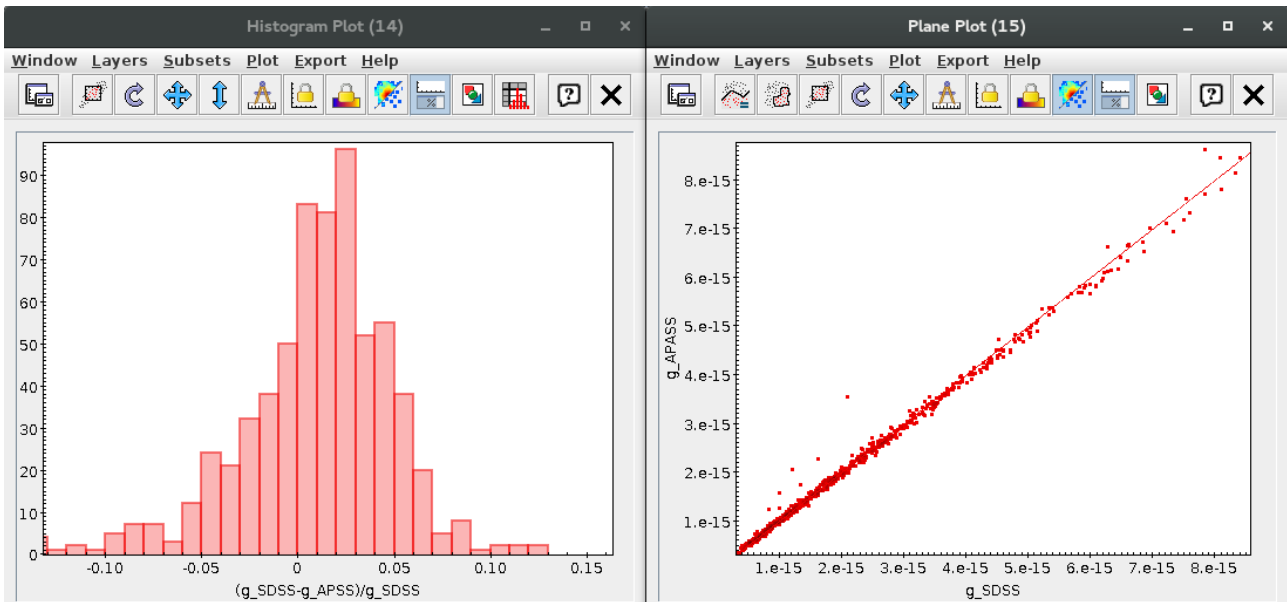


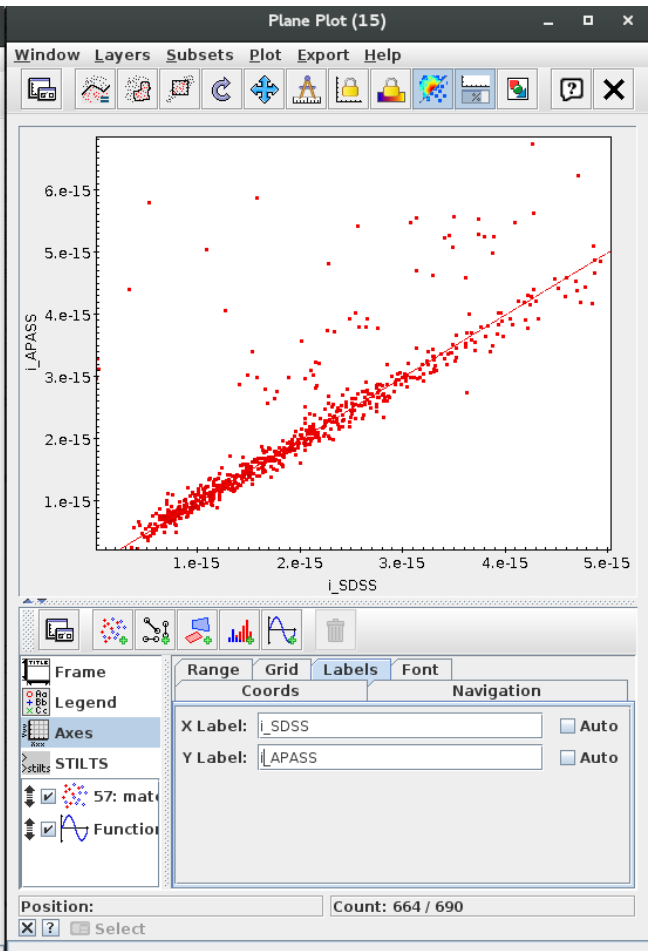
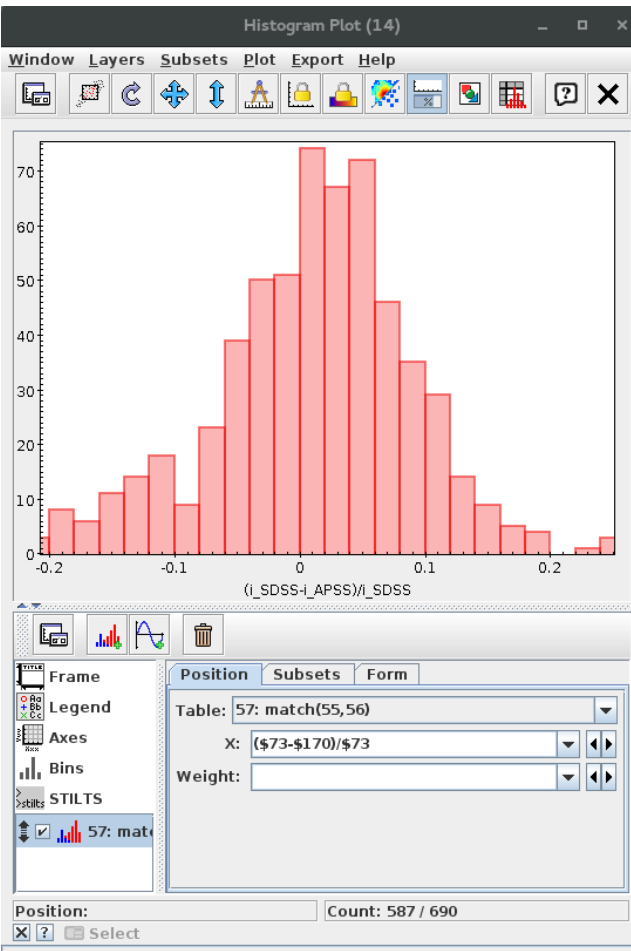
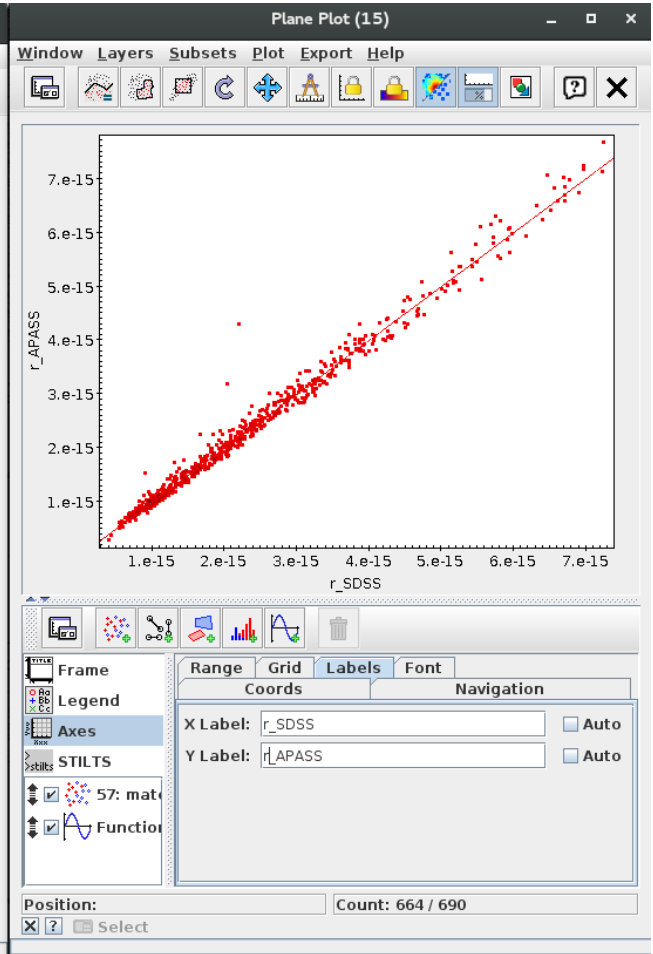
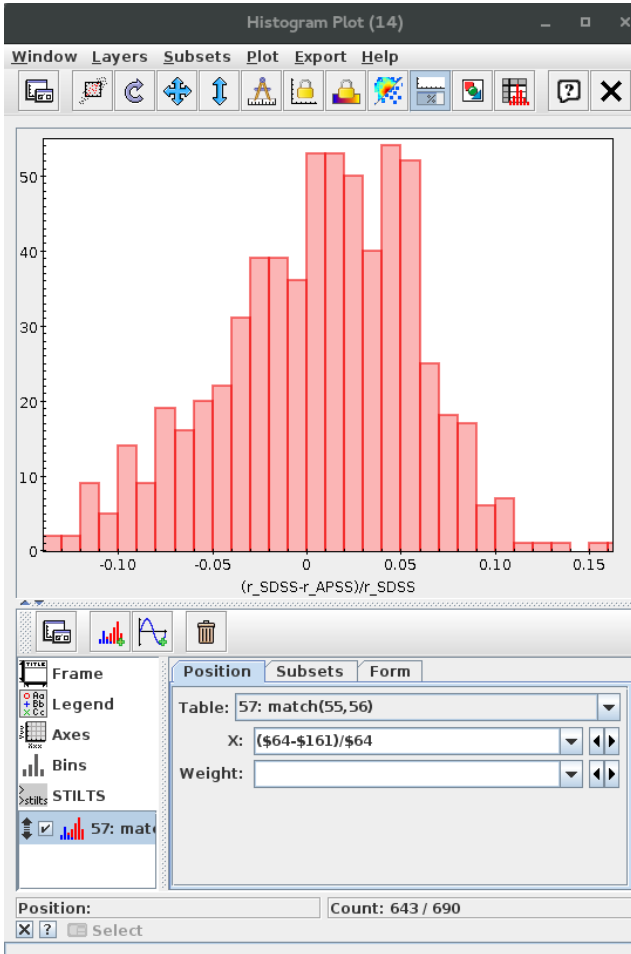
Flux comparison SDSS DR12 / APASS DR9 (g,r,i bands)

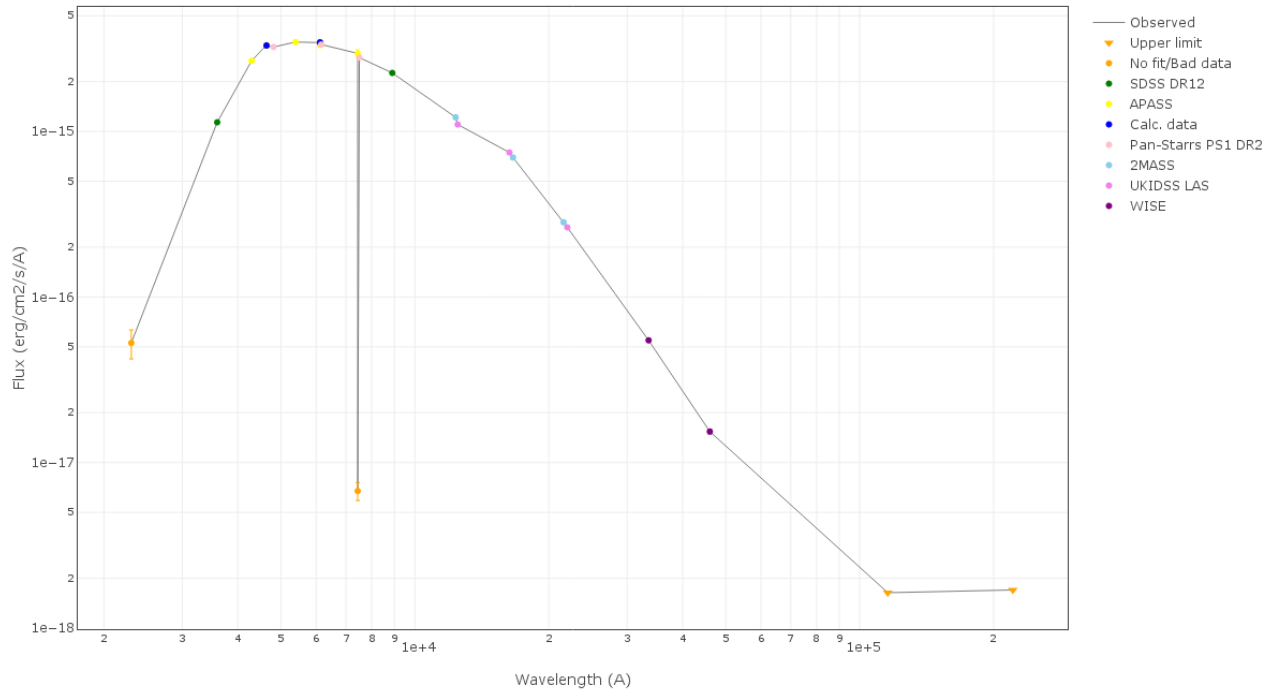
Date of this test: 2020/06/01

We have taken a sample of 664 objects in common in both catalogues and have compared the fluxes provided by VOSA.

- Methodology
 - Search in SDSS DR12 around RA:10.0deg DEC:10.0deg. Radius:5 deg. The search was limited to 100 000 objects
 - $g_{\text{mag}} > 14$ & $r_{\text{mag}} > 14$ & $i_{\text{mag}} > 14$ (to avoid saturated sources) --> 99 414 sources
 - $q_{\text{mode}} = "+"$ (good SDSS photometry) --> 44 555 sources
 - $e_{g_{\text{mag}}}/g_{\text{mag}} < 0.1$ & $e_{r_{\text{mag}}}/r_{\text{mag}} < 0.1$ & $e_{i_{\text{mag}}}/i_{\text{mag}} < 0.1$ (good SDSS photometry) --> 44 528 sources
 - class =6 (to keep SDSS point sources only) --> 14 917 sources
 - Crossmatched with APASS DR9 using CDS x-match (1 arcsec radius to avoid mismatches) --> 751 sources
 - $e_{g_{\text{pmag}}}/g_{\text{pmag}} < 0.1$ & $e_{r_{\text{pmag}}}/r_{\text{pmag}} < 0.1$ & $e_{i_{\text{pmag}}}/i_{\text{pmag}} < 0.1$ (good APASS photometry) --> 664 sources
- Conclusions:
 - g,r band: No bias.
 - i band: Almost 7% of the sources show fluxes significantly lower in SDSS than in ADASS. These discrepancies are already present in the magnitudes of the original catalogues and are not related to the transformations from magnitudes into fluxes. As we can see in the last figure, the problem affects to SDSS values while APASS values nicely fit the spectral energy distribution.







RA: 10.57339; DEC: 5.34662