AGN host galaxies stellar populations from SDSS data: Likelihood indices

Alessia Moretti and Guinevere Kauffmann

The dataset: In this work we analyze subsamples of objects taken from the second data release of the SDSS, which contain spectra for 26,014 galaxies with Petrosian magnitudes 14.18 < $r$ < 17.77. The strong and galactic extinction has been taken into account using the reddening maps by Schlegel et al., 1998. For these galaxies stellar masses and stellar surface densities have been calculated according to Kauffmann et al., 2001, while emission and absorption are measured for the galaxies using the procedure described in Tristram et al., 2004. We note here that reddening emission lines are measured after subtracting the stellar continuum, which varies from the flux of the total population best absorption lines are measured instead on this stellar spectrum after the subtraction of all the emission lines.

Our characterization the AGN host galaxy stellar population through the Likelihood indices (Wilkinson, 1994; Trager et al., 1998) including the high number better tracer (Wilkinson and Chen, 1997) and the 4000 Å break as defined by Wiltshire et al., 2008. The number of galaxies available for these samples is commonly used in recent papers (Kauffmann et al., 2003; Brinchmann et al., 2004, Dekker et al., 2004) to infer ages of stellar populations, since it is an excellent indicator of the presence of a young or average star formation activity in galaxies.

![Image](Fig 1) - This figure shows the distribution of the galaxies based on their mass and stellar population.

**Caveat:** Our findings might be strongly dependent on the underlying age-metallicity relation. In this case, the large range in mass and stellar population means that our results might be influenced by the presence of a young or average star formation activity in galaxies.

**Caveat:** This figure shows the distribution of the galaxies based on their mass and stellar population.

For this reason, in order to compare the results with those of other studies, we have to be careful in interpreting the derived ages and metallicities.

**Fig 2:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 3:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 4:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 5:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 6:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 7:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 8:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 9:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 10:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 11:** This figure shows the distribution of the galaxies based on their mass and stellar population.

**Fig 12:** This figure shows the distribution of the galaxies based on their mass and stellar population.