AGN Host Galaxies in the COSMOS field



by A. Bongiorno, A. Merloni, T. Miyaji, M. Brusa and the COSMOS team

We present a study of the AGN host galaxies of a sample of ~1800 AGN obtained combining X-ray (XMM-COSMOS) and optical selection (zCOSMOS). Two-component SED fitting has been performed to disentangle the AGN and the galaxy contribution and to derive the properties of the host galaxies. AGN host galaxies are found to live preferentially in massive galaxies. In the sSFR vs Mass plane AGN live mostly in transition galaxies between the star-forming main sequence and the passive galaxies. The mass function of the AGN host galaxies is well described by the prediction of Peng+10 for galaxies in the process of being quenched, suggesting that AGN feedback can be the responsible mechanism for quenching star formation in galaxies that host an AGN.





Fig. 1: The observed SED (black points) is fitted with a large grid of models made from a combination of AGN (blue lines) and hostgalaxy templates (magenta lines). Given the wide multi-wavelength coverage of COSMOS, this technique allows to decompose the SED into a nuclear AGN and a host galaxy component and to derive robust measurements of the host galaxy properties e.g. stellar mass, K-band luminosity and star formation rate.



4 At any redshift, AGN live in the most massive galaxies

The sSFR of AGN host gal. increases with z but is at any redshift lower than normal gal.
At 0.8< z <2.0 AGN live in transition/quenched galaxies (white dotted lines show the transition between the star-forming main sequence and the passive galaxies)

for the formation of the stellar population in a galaxy. $t_{H(z1-z2)} =$ Hubble time at a given z. (dotted line) if $t_{SF} > t_H$ passive gal. if $t_{SF} < t_H$ star forming gal.

