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the fraction of light coming from young stellar populations, here denoted by LFYS, in a volume-limited sample from the SDSS DR7 catalog. We then classify as PSB those galaxies with LFYS larger than 70%, log([NII]λ6584/Hα) higher than -0.4 and Hα equivalent width (EW Hα) smaller than 5 Å. These two last criteria select galaxies without current star formation (Cid Fernandes et al. 2011). When plotting this sample in the BPT diagram, we identify a high occurrence of LINER and Seyfert hosts, as found by Yan et al. (2008). However, using the WHAN diagram, we show that most of post-starburst galaxies with low emission lines are in fact passive galaxies, frequently misclassified as weak AGN hosts.

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ACTIVE GALACTIC NUCLEI

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P. Arévalo[1]

Accreting supermassive black holes have had a large impact in the evolution of their host galaxies, and even inject significant energy into their host cluster of galaxies. Although the black hole's influence in these large structures is evident, the central engine itself is remarkably difficult to observe. Their extremely compact nature makes it impossible to resolve the final source of fueling, the accretion disc, although interferometric observations have started to reveal important details of the material directly outside this region. In this work I review the techniques that have shed light into the structure and behavior of these central engines in the quest to find out how black hole grow.

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TESTING THE PHYSICAL PROPERTIES OF THE UNIFIED MODEL FOR AGN

A. Audibert[1], R. Riffel[1], M. G. Pastoriza[1], and D. A. Sales[1]

The Unified Model (UM) suggests that different AGN classes are due to the presence of a torus, which under different view angles can obscure the supermassive black hole and the broad line region. We analyze statistically the physical parameters of a sample of about 100 Seyfert galaxies using public data from Spitzer telescope in the mid infrared (5.2-38 μm) in order to verify the UM. We compare the spectral energy distributions (SEDs) with $\sim 10^6$ theoretical SEDs which consider that the torus is formed by dusty clouds and present the results for 8 CLUMPY parameters.

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TWO-DIMENSIONAL KINEMATICS OF THE CENTRAL REGION OF NGC4501 FROM GMOS/GEMINI INTEGRAL FIELD SPECTROSCOPY

C. Brum[1], R. A. Riffel[1], T. Storchi Bergmann[2], A. Schnorr Muller[2], and A. Robinson[3]

We present two-dimensional stellar and gas kinematics in the central region of the Seyfert 2 galaxy NGC 4501 from optical Integral Field Spectroscopy obtained with Gemini Multi-Object Spectrograph (GMOS) at Gemini-North telescope. The final data cube contains $\sim$16000 spectra covering the inner 7" $\times$ 15" at spatial resolution of $\sim$ 50 pc and covering the spectral region from 5600 Å to 7000 Å at a spectral resolution of 2.7 Å (FWHM). Two-dimensional maps for the flux, velocity and velocity dispersion (σ) were obtained from the fitting of the emission-line profiles of Hα, [N II] $\lambda\lambda$ 6548,6584 and [S II] $\lambda\lambda$ 6717,6731. All lines present extended emission to up to 5" the peak of flux of the nuclear at it. The gas velocity field for all lines are similar, being dominated by rotation in the plane of the galaxy with a velocity amplitude of 100 km^{-1}, although deviations from rotation are seen at some locations. On the far side of the galaxy we observed blueshifts and on the near side redshifts along spiral structures, being interpreted as inflows towards the nucleus of NGC 4501. The forbidden lines show σ values ranging from 50 to 150 km s^{-1} while the Hα shows overall smaller values, with the highest ones reaching $\sim$ 100 km s^{-1}. The highest σ values for all emission lines are observed at 2-3 arcsec northeast from the nucleus, being co-spatial with a distortion seen in the

velocity field. The electron density map obtained from the [SII] $\lambda\lambda$ 6731/6716 line ratio shows values between 100 cm^{-3} the nucleus to 900 cm^{-3} in a ring of high densities.

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MORPHOLOGY AND ABSOLUTE MAGNITUDES OF THE SDSS DR7 QSOs

B. Coelho[1], A. H. Andrei[1,2,3,4], and S. Antón[5,6]

The ESA mission Gaia will furnish a complete census of the Milky Way, delivering astrometrics, dynamics, and astrophysics information for 1 billion stars. Operating in all-sky repeated survey mode, Gaia will also provide measurements of extra-galactic objects. Among the later there will be at least 500,000 QSOs that will be used to build the reference frame upon which the several independent observations will be combined and interpreted. Not all the QSOs are equally suited to fulfill this role of fundamental, fiducial grid-points. Brightness, morphology, and variability define the astrometric error budget for each object. We made use of 3 morphological parameters based on the PSF sharpness, circularity and gaussianity, which enable us to distinguish the "real point-like" QSOs. These parameters are being explored on the spectroscopically certified QSOs of the SDSS DR7, to compare the performance against other morphology classification schemes, as well as to derive properties of the host galaxy. We present a new method, based on the Gaia quasar database, to derive absolute magnitudes, on the SDSS filters domain. The method can be extrapolated all over the optical window, including the Gaia filters. We discuss colors derived from SDSS apparent magnitudes and colors based on absolute magnitudes that we obtained tanking into account corrections for dust extinction, either intergalactic or from the QSO host, and for the Lyman α forest. In the future we want to further discuss properties of the host galaxies, comparing for e.g. the obtained morphological classification with the color, the apparent and absolute magnitudes, and the redshift distributions.

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KINEMATICS AND EXCITATION OF THE NUCLEAR SPIRAL IN THE ACTIVE GALAXY ARP 102B

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We present a two-dimensional analysis of the gaseous excitation and kinematics of the inner $2.5 \times 1.7\,\mathrm{kpc}^2$ of the LINER/Seyfert 1 galaxy Arp 102B, from optical spectra obtained with the GMOS integral field spectrograph on the Gemini North telescope at a spatial resolution of $\approx$ 250 pc. Emission-line flux maps show the same two-armed nuclear spiral we have discovered in previous observations with the HST-ACS camera. One arm reaches 1 kpc to the east and the other 500 pc to the west, with a 8.4 GHz VLA bent radio jet correlating with the former. Gas excitation along the arms is low, with line ratios typical of LINERs. The gas density is highest at the nucleus and in the northern border of the east arm, at a region where the radio jet seems to be deflected. Centroid velocity maps suggest that most gas is in rotation in an inclined disk with line of nodes along position angle $\approx 88°$, redshifts to the west and blueshifts to the east, with lower blueshifts correlated with the eastern arm and radio jet. This correlation suggests that the jet is interacting with gas in the disk. Channel maps show blueshifts but also some redshifts at the eastern arm and jet location which can be interpreted as originated in the front and back walls of an outflow pushed by the radio jet, suggesting also that the outflow is launched close to the plane of the sky. We propose a scenario in which gas has been recently captured by Arp 102B in an interaction with Arp 102A, settling in a disk rotating around the nucleus of Arp 102B and triggering its nuclear activity. A nuclear jet is pushing the circumnuclear gas, giving origin to the nuclear arms.