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ABSTRACTS OF CONTRIBUTED PAPERS

ON THE OPTICAL FEATURELESS CONTINUUM IN AGN

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Stellar absorption lines may sometimes appear weaker in the nucleus of galaxies than in their external regions. It can be explained by the presence of an extra component of continuum in the nucleus. This component can be either of non-thermal origin, in particular in the case of active galaxies, or of stellar origin in the case of a nuclear starburst. The study of the shape of the diluting spectrum should allow to differentiate between these two hypotheses. This work, however, is usually based on the comparison of the strength of absorption lines in normal and active nuclei. The weakeness of this method comes from the comparison with normal galaxies whose internal reddening, velocity dispersion, central metallicity and stellar population may not necessarily be comparable to that of an active nucleus and not even be a good representation of the underlying bulge. Another way to search for dilution is to compare the stellar absorption lines in the nucleus with those in the surrounding regions in the bulge of the *same* galaxy. The fraction of non-stellar light within the nucleus of 3 Seyfert 2 galaxies has been estimated from long slit spectroscopy (using Ca II lines), assuming that the stellar population in the nucleus is the same as that in the surrounding region. The stellar spectra of the nucleus and bulge of NGC 2110 are identical when scaled, i.e., the stellar population of the nucleus is dominated by that of the bulge. No additional internal reddening is needed in the nucleus to match the spectral energy distribution. Similarly, the bulge and nuclear stellar populations of Mrk 620 are identical when a nuclear internal reddening of $E(B-V) = 0.19$ is taken into account. The weakness of Ca II in the nucleus of Mrk 3 is partly due to the presence of emission lines but a weak featureless component does appear after subtraction of the bulge stellar population. The reddening of the nucleus is moderate, $E(B-V) = 0.08$. Thus, no extra-component is detected in the nucleus of NGC 2110 or Mkn 620, while one is marginally present in Mkn 3. Very different proportions of featureless continua can be found in the literature for all 3 Seyfert 2 galaxies, ranging from none up to 60%. Recall that most methods are subject to large uncertainties as the estimates are obtained by comparison, direct or statistical, with very different types of galaxies. The problem of subtraction of a stellar population and evaluation of the featureless continuum requires the most representative population of the nucleus but also to carefully take into account reddening gradients within the bulge. Such gradients can affect the slope of the featureless continuum. Within this framework, we conclude that the featureless continuum might be weak in Seyfert 2 nuclei and the stellar population quite homogeneous across the bulge.

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SYNTHESIZING STELLAR POPULATIONS: THE STARBURST GALAXY NGC 3310

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We have quantified the stellar population in the nucleus and bulge of the Starburst galaxy NGC 3310, by means of optical long slit spectroscopy (5000–10000 Å) and an algorithm that computes the stellar population using the equivalent widths of all the absorption lines in the galactic spectra (~ 40). The same lines are mesured in a stellar library of 24 stars. The library covers all luminosity classes and all late spectral types. As our wavelength range begins at 5000 Å, we do not expect a high contribution from the early type stars, but some early type dwarfs have been included. We have also included super metal rich (SMR) and weak metal stars. A stellar library is used, rather than an integrated stellar cluster library, as we are interested in the individual types of stars and we have to cover a wide metallicity range