ABSTRACT

CHARACTERIZATION OF NARROW LINE SEYFERT 1 GALAXIES FROM SDSS SPECTRA

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Narrow-Line Seyfert 1 (NLS1) galaxies are a subclass of Seyfert 1 galaxies with emission of [O III] relatively weak compared with the Balmer lines. Additionally, the broad components of the recombination lines are slightly wider than the forbidden lines (FWHM$_{H_\beta}$ $<$ 2000 km s^{-1}). However, the nature and physical characteristics of these Active Galactic Nuclei are not fully understood. In this work, we wrote a SQL code that selects from the Sloan Digital Sky Survey (SDSS) server a sample of these galaxies. In 30 objects we measure flux ratios of lines such as [OIII]λ5007/H_β and [NII]λ6583/H_α. Additionally, we measure widths of the [OIII]λ5007 line and use it as an alternative value for stellar velocity dispersion σ_*. A BPT diagnostic diagram confirms that half of the objects are between the starburst and composite regions (HII-AGN types). With the $M_{BH} - \sigma_*$ relationship, we made an estimate of the mass of the black holes, obtaining values between 10^6-10^7 $M_\odot$. This confirms the idea that the NLS1 objects are Active Galactic Nuclei of relatively low mass.

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